The Physical Educator

THE OFFICIAL PUBLICATION OF PHI EPSILON KAPPA FRATERNITY

AFFILIATED WITH THE AMERICAN ASSOCIATION FOR HEALTH, PHYSICAL EDUCATION AND RECREATION

Vol. II | APRIL, 1942 | No. 4

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CONTENTS

DEVELOPING PHYSICAL FITNESS IN THE CINCINNATI PUBLIC SCHOOLS — *W. K. Streit* — 146
EXCERPTS FROM THE OPERATING CODE OF THE STATE COMMITTEE OF PUBLIC RELATIONS (California) — 149
THE HUMAN ELEMENT—ANOTHER STORY — *Charles Leroy Lowman, M. D.* — 150
THE INTRAMURAL PROGRAM AT HARDIN JUNIOR COLLEGE — *D. L. Ligon and Helen Cline* — 151
CONCERNING THE POST-WAR PROGRAM — *Robert E. Schneider* — 153
FEAR IN RELATION TO CHILDREN'S SKILLS — *Norma Schwendener, Ph. D.* — 154
TECHNIQUES USED IN A FUNCTIONAL HEALTH SERVICE PROGRAM — *Marjorie Nowlin* — 156
REPORT OF COMMITTEE ON OBJECTIVES OF PHYSICAL EDUCATION — 158
A PRACTICAL COLLEGE BACKGROUND FOR MAJOR STUDENTS IN PHYSICAL EDUCATION — *Kenneth D. Miller* — 159
FITNESS IN A DEMOCRACY — *Floyd R. Eastwood, Ph. D.* — 163
BRIDGING THE GAP BETWEEN CORRECTIVES AND THE REGULAR PROGRAM — *Caroline Sinclair, Ph. D.* — 166
THE PRESENT QUALITY OF HEALTH EDUCATION — *Joseph A. Amori* — 169
OUR BOYS AIN'T GOT RHYTHM! — *Christopher Wuest* — 171
ELEMENTS IN A PUBLIC RELATIONS PROGRAM — *C. Harold Bacon* — 173
A PLAN TO PROVIDE FOR THE GIRL WHO MUST HAVE A TEMPORARY EXCUSE FROM PHYSICAL EDUCATION CLASS — *Gladys B. Gogle* — 175
SUGGESTIONS FOR DEVELOPING PHYSICAL FITNESS — *Dr. T. K. Cureton, Jr.* — 176
MY KINGDOM FOR A TEXT OR PRACTICES IN THERAPEUTICS IN COLLEGES LAST YEAR — *Edythe Saylor* — 178
ACHIEVEMENT SCALES IN STRENGTH TESTS FOR SECONDARY SCHOOL BOYS AND COLLEGE MEN—*Part II* — *Karl W. Bookwalter, Ed. D.* *Carolyn W. Bookwalter, Ed. D.* — 179
BOOK ANNOUNCEMENTS — 191

THE PHYSICAL EDUCATOR is published in the months of October, December, February, April and June, by Phi Epsilon Kappa Fraternity, a professional fraternity in physical education. Editorial and executive offices are located at 1537 West 29th Street, Indianapolis, Indiana.

The publication is mailed to all members of the fraternity who are in good standing by reason of payment of current membership fees, and to others on the basis of a subscription fee of $1.50 per year. Single copies and back copies at 35 cents.

"DEVELOPING PHYSICAL FITNESS IN THE CINCINNATI PUBLIC SCHOOLS"

A Radio Broadcast

Presented over WCPO in cooperation with the Cincinnati Public Schools

W. K. STREIT

Director of Physical Education

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ANNOUNCER: War demands the development of *total fitness* on the part of every individual in the United States. This total fitness is essential to the maintenance of our democratic ideal. It entails the maximum development of the physical, mental, social, and spiritual well being of boys and girls, of men and women. Any curtailment of educational opportunities through which this maximum achievement is accomplished would mean a step backward in the national program of development of those qualities of fitness which are essential if we are to endure as a free and democratic people.

WCPO has in its studios this afternoon, three individuals who are interested in the total fitness of boys and girls and more particularly in their physical fitness. They are W. K. Streit, Director of Physical Education in the Cincinnati Public Schools; Winton L. Moeller, Assistant Director, and Mrs. Helen S. Edger, supervisor of Primary Physical Education.

Mr. Streit, we're interested in learning from you what the Cincinnati Public Schools are doing to develop healthy and physically fit citizens.

STREIT: And I'm glad of this opportunity, Mr. ————, to answer that question. Throughout the entire educational program of the Cincinnati Public Schools,—beginning in the kindergarten and extending through the twelfth grade of high school, physical education is a required subject. Recently completed courses of study now in the hands of competent and enthusiastic teachers insure increasing and constant emphasis on the body building, developmental type of activity—the kind that results in better physical fitness. Exercise is a power builder. Power to do, comes through doing, and exercise—total body exercise—is the trigger which sets off a whole series of physiological powers. The power-building years are in youth, primarily from ages five to fifteen. This being true, it throws a heavy responsibility on the guidance of young children, as Mrs. Edger will tell you.

EDGER: It most assuredly does. I think it is easily understood that the more skills a young child masters, the more physical activities he will be able to participate in—with both benefit and satisfaction to himself. You see skills are learned easily when children are young. And the simple skills learned in the primary grades build the foundation for the more elaborate activities that are taught as the child goes through the grades. Perhaps you would like to add something to that, Mr. Moeller.

MOELLER: Well, it goes without saying, I think that physical exercise—and a great deal of it—is not only advocated, but is absolutely essential as one of the necessary means of attaining a healthy development. The youth who exercises plentifully becomes tired and will rest better; he gets hungry and will eat more; he has more need for oxygen and breathes more deeply and more rapidly; he has more waste content to be carried from the cells and needs more nourishment for the cells. This causes increased circulation. Therefore, the instruction period in which boys and girls learn and and develop neuromuscular skills, which can be used now, and in the future—that is highly important.

STREIT: And may I add that all of us, young and old alike, ought to "get a kick" out of our exercise; it ought to be fun. Exercise which we hate or which becomes drudgery does us little good. Fun releases our body powers; as the athlete says, it "makes us click".

EDGER: And of course for exercise to be of *value,* the body must be free from infection as a basic principle of good health. Infections sap one's vitality. The body should also be properly nourished. For these reasons, in all schools, we stress the medical examination of children as a means of discovering physical defects and then induce parents to make corrections by consulting their family doctors or by visiting any of our city's many clinics. All schools also see that children are inspected each morning for signs of disease or other abnormalities. This is part of the health program which is so essential to normal growth and development.

MOELLER: The findings of the draft boards show that there are many defects among men of service age, and there is much value in the data derived from these examinations. Many of the proposals made for national "good health" are purely corrective and salvaging in character. But important as these are for those who are unfortunate enough to be defective, the greater need is for *prevention.* Therefore, existing programs of public health working along with the schools need to be expanded, there needs to be more emphasis on nutrition, mental health, industrial health, and perhaps the provision of some form of health insurance or state medicine.

STREIT: Along that same line, Mr. Moeller, our National Association of Physical Education teachers points out that we need to build a physical education program that in 15 or 20 years will give us a new generation—a nation of people who—developed through vigorous outdoor life and guided by expert medical care, are interested in wholesome forms of physical activity and recreation. They point out that we must concern ourselves nationally with children of school age if the health, physique, endurance, and vitality of our people are to be insured. And speaking of a program, Mrs. Edger, let's get back to the physical activities of little children here in Cincinnati.

EDGER: Well the program in our schools includes rhythms, developmental exercises, singing games and dances, stunts and apparatus. Play *predominates,* but it is the *kind* of play which serves the purpose of making the body *strong.* Stunts and apparatus activities probably make the greatest contribution to body building. As the child climbs, turns his somersaults, bends, stretches, pushes and pulls, he exercises and strengthens all parts of his body in fewer movements and in a shorter time.

STREIT: And in addition to this physical development of which you speak, there are other benefits derived from the stunt and apparatus program, are there not?

EDGER: Yes; along with physical development, children develop courage, determination, stick-to-itiveness, how to wait turns, a wholesome appreciation of their own limitations, respect for the ability of others, and a desire to achieve. These are all *very desirable* citizenship traits.

STREIT: Speaking of traits, Mr. Moeller, what about the close relationships between athletics and national defense?

MOELLER: Active physical sports and games, Mr. Streit, develop such virtues as resourcefulness, physical vigor, agility, and stamina. Our Cincinnati youth learn these virtues on the athletic field, in the gymnasium, swimming pools, summer camps and playgrounds. Self-reliance, self-control, self-confidence, mental poise, integration of personality, all of these are outcomes of a systematic program of physical education and athletics. They are valuable in ordinary times, but doubly important in these hours of national emergency.

STREIT: To perform their duties satisfactorily, men in our armed forces must possess great organic vigor, muscular and nervous strength, endurance and agility. Consequently, in our physical education program in the schools we are intensifying our efforts to produce healthy, strong, vigorous individuals by giving attention to these things:

1. Fundamental skills, posture, and discipline, by making certain shifts in emphasis and time allotment.
2. Swimming as one of the best forms of exercise and intensely valuable in war or peace.
3. Intramural athletics for all boys and girls in the schools.
4. Cycling, hiking, and camping as important related activities.
5. Healthful living involving establishment of proper habits, attitudes and knowledge of health matters.
6. First aid for the protection of self and others.

MOELLER: Speaking of physical fitness, Mr. Streit, I think it is pertinent to point out that it is *not* a *commodity,* the production of which can be speeded up. It takes years to develop a strong, healthy body. With this in mind, the schools are definitely committed to an extension of the intramural athletics program—(by that I mean competition between classes within each school)—so that every child will have an opportunity of participation regularly, and for adequate periods of time, in some acceptable physical activity. It seems extremely unfortunate that it takes a war to arouse citizens sufficiently to do something about their own physical fitness, but now that they are aroused and a little alarmed about it, let's hope that all limitations to the offering of an adequate program in all of our nation's schools will be removed.

STREIT: And in your best judgment, what are these limiting factors, Mr. Moeller?

MOELLER: First of all, I would list the matter of facilities and equipment. Schools throughout the country, and many of our Cincinnati schools are sadly lacking in playground space, athletic fields, gymnasiums, and the like. Secondly, the schools are at a decided disadvantage in not having enough *man-power* for adequate and capable supervision and instruction. Basically this comes right down to a matter of finances—but health and physical fitness are too important to our nation's welfare to be sacrificed.

STREIT: That's very true. We have been speaking about instruction in physical activities and athletics in school hours. All of this has to have a relation to the child's leisure time, doesn't it, Mrs. Edger?

EDGER: And it does, Mr. Streit. Floor stunts taught at school can be practiced at home. Children who do practice at home not only derive physical benefits from the exercise, but use their leisure time more satisfactorily—and sometimes even interest their parents in doing the same. They are also able to improve more rapidly in their physical education work at school. In addition to this, considerable emphasis is placed upon skills in games, such as tossing, throwing, and catching a ball correctly. The ability to play a game well depends upon how well a child has mastered the elements of the game. A child who can play well

will be more popular with his playmates. What is true of the wise use of leisure time at the primary level also applies to upper elementary and high school youth. We very definitely teach skills which carry on and over into later life.

STREIT: Now, let's see, we have already brought out the fact that the school class period is a *teaching period* in physical education; that intramural athletics supplement the activities conducted during the school session and which grow out of the skills learned there. Won't you explain briefly about the interschool sports program, Mr. Moeller?

MOELLER: All varsity team activities in the Cincinnati Schools are the outgrowth of an intramural program. In other words, they represent the peak of a pyramid whose base is the daily class program, and whose middle portion is the intramural program. So in Varsity competition, the pupils of one school with the highest degree of skill compete against pupils of similar ability from other schools. In this way, school spirit and school discipline is built around the interschool athletic program. Incidentally, if we have athletics, we shall never be without soldiers, because the same qualities that make a good athlete, make a good soldier.

STREIT: I have heard military authorities say they prefer a sound program of physical education in the schools to any *so-called* form of military training. Intelligent and continued training under experienced leadership is the major element in the attainment of physical fitness. The youth of our schools should take every advantage of the experience of their physical education instructors. Physical education is a process that requires time for the attainment of its ends, but its rewards are definite, tangible, and valuable.

And now, Mr. ————, may I say for Mrs. Edger, Mr. Moeller, and myself that it has been a pleasure to be guests of WCPO this afternoon and to explain for the benefit of the citizens of Cincinnati some of the airs and benefits of the physical education program of the Cincinnati Public Schools. In conclusion may I say it is the right of every child to enjoy the opportunities of good health, social intercourse, and self-confidence through participation in physical activities. No department in our city's entire school system, no phase of the whole educational program is so strongly challenged to contribute to the basic potentiality of full and complete living, as is physical education. Every attempt is being made to be sure that *what* we teach carried *on* and *over* into the out-of-school life of the individual, that our present facilities are used to the fullest extent, that physical defects are discovered and corrected that we accent implications for emotional and social health in sports and games, and that there are daily periods of instruction and participation in physical education activities. Now is the time that our nation is demanding increased emphasis to the development of physical fitness.

ANNOUNCER: For the past quarter hour you have heard Mr. W. K. Streit, Director of Physical Education in the Cincinnati Public Schools; Mr. Winton L. Moeller, Assistant Director, and Mrs. Helen S. Edger, Supervisor of Primary Physical Education, discuss "The Physical Education Program of the Cincinnati Public Schools."

This has been the fifth in a series of weekly "Know Your Schools" broadcasts planned by WCPO to help acquaint you with the work and operation of your largest public institution—Tune in again next Sunday afternoon at 5:30 for more information about *your* public schools.

American public education never carried a heavier responsibility than in these trying times. By that same token it never had a better opportunity to serve the nation. That the Cincinnati Public Schools are doing that is evidenced by the following war duties in which the schools are engaged:

Training workers for war industries and services.

Safeguarding health and physical efficiency.

Producing goods and services needed for the war.

Conserving materials by prudent consumption and salvage.

Helping to raise funds to finance the war.

Increasing effective man-power by correcting educational deficiencies.

Protecting school children and property against attack.

Protecting the ideals of democracy against war hazards.

Sustaining the morale of children and adults.

Maintaining intelligent loyalty to American democracy.

In cooperation with the Cincinnati Board of Education, this has been a public service presentation of Station WCPO. This is ——— saying good afternoon.

EXCERPTS FROM THE OPERATING CODE OF THE STATE COMMITTEE OF PUBLIC RELATIONS (California).*

Purpose

In view of the fact that anything done by any member of the Association becomes a matter of public relations before it ends, and that the work of all committees is in some degrees related to public relations, the committee will:

a. "Assemble and distribute information on desirable practices in public relations designed to develop good will for our field with the public through contact with organizations such as Service Clubs, P. T. A.'s, the American Legion, and other groups, through uniform official bulletins."
b. "Serve energetically in the attempt to answer by letter or bulletin questions on public relations methods or policies which may be addressed to this committee."

Reports

The chairman shall prepare a report of accomplishments of the committee and submit it to the State Executive Committee at the Spring Meeting.

Bulletins

From two to four bulletins annually is the objective of the committee. The Public Relations Bulletins are to be in yellow cover paper.

Suggestions for the work of the Public Relations Committees of Local Units.

1. Answer all correspondence coming from the State Committee, State Officers, Section Committees and Section Officers immediately.
2. See that the Activities of the Unit are reported to the local newspapers.
3. See that the newspapers receive accounts of the important happenings in the field of Health, Physical Education and Recreation in the community, section, and state.
4. Investigate the possibility of the newspapers' running, at regular intervals, articles contributed by members of the Unit.
5. Contact the program chairmen of Service Clubs, Parent-Teacher Groups, American Legions, and other organizations and offer speakers, demonstrations, and other types of programs for their meetings. Speakers and speeches could be developed in the Unit.
6. See about the possibilities of conducting radio programs over a local radio. Talks by prominent people, short skits, quiz programs are a few ideas that could be developed. Students and people in the community could be used. Some school or the Recreation Department might have a Radio Club that would cooperate.
7. Encourage local schools to capitalize on parent nights, open house, Visiting Day, etc.
8. Investigate the possibility of displays in prominent windows or showcases picturing the activities of Health, Physical Education, and Recreation. Show forms and records used and programs developed at the various schools. A movable display board could be developed for exhibit purposes at Section Conferences and the State Conference, as well as use locally.
9. Make the membership conscious that the best Public Relations work is done in the daily performance of duty in a professional way.
10. At least every two years plan some affair (dinner) and invite school officials, Superintendent, Board members, Principals, etc. City officials should also be included at functions, appropriate, and don't forget the press.
11. Cooperate with other committees and assist them in getting their programs before the public for its general information.
12. Information about the staff of workers in the field of Health, Physical Education, and Recreation should be presented to the general public, i.e., Educational background, degrees, travel, writings, recognition outside the fields or outside the community.

* Personnel of Committee: J. Ray Hawerth, Pasadena, Chairman; John Burke, Los Angeles; Harry Griffith, Arcata; Florence Weeks, Oakland; and Carlton Weed, King City.

THE HUMAN ELEMENT—ANOTHER STORY*

CHARLES LEROY LOWMAN, M.D.
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We are informed that in defense industries the machines that press and hammer, cut and forge, have been so improved by intelligent studies of steel and its peculiarities that they perform twenty-four hours per day for months without stopping. With the human element, however, it is another story. Men can stand only so much and under the present speed-up the physical and mental strain is frequently more than they can stand and their let-down may be costly. In the army and navy, those in the best state of physical strength and health are chosen, others are discarded—the percentage of the latter amounts to forty or fifty per cent of the total drafted.

As it takes about eight civilians in industry to keep one soldier in the service, it can very readily be seen that the state of civilian health is a very important item in the defense set up. Let us look at the actual requirements physically of the workman at his job. He must stand or sit for hours at a stretch, bending forward, using hands and eyes. He is using chiefly the anterior muscles of the body, the flexors. In order to focus his eyes steadily on what he is doing, his head must be stabilized by the muscles of the neck, shoulder girdle, and trunk. His body must be steadied by the balance muscles of feet, legs, and trunk.

What has been the preparation in high school and college to meet the strain of such work. The majority of our gymnastic and athletic activities over-emphasize the work of the flexor muscles. Throwing the shot, striking the ball, reaching forward and upward to catch a ball, boxing, wrestling, discus and javelin throwing, are some of the athletic stunts.

As we scrutinize the run of the mill, students of these age groups, we are struck with the predominance of forward heads, droop shoulders, wide scapulae, flat chests, relaxed abdominal walls, tilted pelves, both lateral and antero-posterior deviations, bad alignment of legs, pronated ankles, and weak feet.

Isn't it time that coaches and physical directors attempt to anticipate the future needs of these individuals? As long as gravity and a work load requiring forward and semi-flexed positions of the body are going to be the lot of the workman and also of those in the white collar, clerical, and executive groups who work over desks, typewriters, drafting boards, etc., would it not be wise to place the major emphasis on the development of anti-gravity muscles? This would not only help to align the body and promote good body mechanics, but keep the internal organs up where they can function more efficiently, give the diaphragm an opportunity to function properly, and maintain a higher cardio-vascular efficiency as a result. It would also cut down the neuro-muscular strain in all movements of skill because of better joint alignment, reduce the mental and nervous overload required to offset weaknesses and deviations due to malposture and poor organic response.

Perhaps a contribution could be made by our school health and physical education staffs if they could start some sort of gymnastic and recreational programs for the men and women now engaged in defense work. In schools having adult classes, on the playgrounds, and in the recreational centers of our defense plants, a program aimed at relaxing tense nervous systems and building up the muscles that are the opponents of those so continuously used at desks, benches, or machines, might offset possible break downs, prolong the usefulness of the workers, and greatly improve their health and efficiency.

Most workers, realizing the need for change and recreation, take up activities which actually use the same sets of muscles that are used on their jobs. Advice, suggestions, and demonstrations could be offered them as to activities that would counterbalance the evils of their occupation. This would lead to great personal benefit as well as contribute to the great work of defense in which we are all interested.

* This article appeared in Los Angeles School Journal, Vol. XXV, No. 9, November 10, 1941. Permission to reprint given *The Physical Educator*.

THE INTRAMURAL PROGRAM AT HARDIN JUNIOR COLLEGE

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Probably one of the most important trends in the present program of physical education is that concerning intramural programs in colleges, universities, and high schools. Many colleges in the United States have instituted some kind of such program for all students. Although the trend itself is not a new one, its development has been so widespread that one finds very few schools without a program of intramural activities. In a report made in 1938 by one of the authors of this article it was found that 72% of the 25 leading junior colleges of Texas had well organized intramural programs. Since that time it is reasonable to assume that the percentage has increased considerably.

From time to time students and teachers in the field of physical education have discussed and debated the merits of an intramural program over a program that consists merely of interschool competition. It is true that many small colleges and some large ones have completely discarded their intercollegiate program for a program of sports activities that would provide for a larger number of their student body. The authors do not wish to discuss the merits and demerits of these two programs. We wish simply to discuss a few of the merits of an intramural program and to report the manner in which we have tried to solve the problem and to give a few of the plans for the future.

Physical education is no longer considered a separate part of the general education program nor is it considered a "frill" or a "fad." With but a few exceptions the school administrators and leaders of this country have long learned that a well organized and efficiently administered program of physical activities will contribute more to the goals of education than any other school subject.[1] On the other hand, intramurals may be considered as being extra-curricular. At least, an intramural program is a necessary adjunct to a good physical education program. It is likewise sound educational philosophy to assert that intramural athletics will bring out the best in the physical education program.

In the next few paragraphs of this article are found the plans of the intramural program at Hardin Junior College. It is not suggested that all problems have been solved nor that the program is perfectly administered. The program is but four years old and it is believed that much progress has been made in the right direction. The present enrollment at Hardin is approximately 450 students and most of these participate in some intramural activity. The ideal of athletics can best be served if the physical education program includes the greatest good for the largest number of students.

Purposes

The intramural program of Hardin Junior College was organized by the directors of physical education for the purpose of giving all students ample opportunities for participation in their favorite sport on a competitive basis. As shown elsewhere another purpose of the program is to give students practical work in the organization and administration of group activities since a large number of students are used to carry out the program.

Administrative Supervision

The directors of physical education each supervise the program for the two divisions. From the very start the directors felt that their part should be that of supervision only and the guiding spirit but that the students themselves should have the most active part in the operation.

Intramural Council

From the first year of the inception of the intramural program at Hardin Junior College there has been an intramural council organized to act as a kind of governing body. This college is one of the few colleges in Texas, large or small, that has organized such a council.

The council consists of one student each from the various classes in physical education who are elected by the students themselves. Their term of office is nine months.

The group meets regularly as one of the club organizations of the college with its president presiding. The council studies such problems as eligibility, protests, point systems, awards, types of activities, etc. Whenever it is necessary to take such action the intramural council makes recommendations to the Student-Faculty Council so that it may keep in step with the general policies of the school.

[1] Voltmer and Esslinger, *The Organization and Administration of Physical Education*. (New York: F. S. Croft and Company, 1938.)

Intramural Managers

Heading the schedule of activities is an intramural manager for both boys and girls. These managers must concern themselves with the making of schedules, arranging playing times, securing the officials for the various contests, and other things pertinent to actual playing conditions. To assist these two managers, a student assistant is selected for each sport. These student managers are invaluable to a successful intramural program.

Activities

The young men of the college have the opportunity of participating in the following sports and activities: Archery, Badminton, Basketball, Boxing, Croquet, Fencing, Football (touch), Golf, Horseshoes, Ping Pong, Softball, Tennis, Track and Field, Volleyball, and Soccer.

The young women participate in the following sports: Archery, Badminton, Basketball, Fencing, Hiking, Ping Pong, Softball, Tennis, Volleyball, and Soccer.

Choosing Teams

All competition is based upon student classification. For example the Freshman and Sophomore Classes may enter as many teams as they wish. Every student is eligible unless restricted by the By-Laws of the organization. The class winning the most championships at the close of the year's program is declared the intramural champion of the college.

Schedule of Games

Under the supervision of the two directors the two intramural managers draw up the schedules for the various activities. So far as possible most of the games take place during the regular activity period each Monday and Wednesday. If it becomes necessary to play games after school and at night, the students are usually more than glad to co-operate.

Play Nights

For the first time in the history of the college its students are afforded the opportunity of coming to the gymnasium and participating in a program of "free play." This is sponsored by the intramural council. On these nights the students are joined by members of the faculty in such games as volleyball, ping pong, fencing, and basketball. Students wishing to box have several sets of boxing gloves at their disposal. Usually before the time is consumed both students and faculty join in a short period of square dancing. These play nights are co-recreational and thus far, have proven very entertaining and successful. Since the play night has been introduced the students have turned out in good numbers. On one occasion during the present year the Senior class from a neighboring high school was invited to visit the college and remain to participate in the regular play night.

Hiking Club

A very active group or club that is sponsored by the intramural council is the girls' Hiking Club. Every girl in Hardin Junior College is eligible to belong to this club and its membership is voluntary. In order to be an active member of the club each girl must fulfill all of the requirements of the organization. For example, its membership voted this year that each girl must hike at least two miles per week to be in active membership.

The club annually elects a regular list of officers who serve throughout the school year. The primary duty of the secretary is to check with the membership on hikes. At regular monthly meetings the club discusses plans for picnics, hikes, parties, etc. The highlight of the Spring activities is an annual "Adamless Struggle" (an all girls' dance) in the college gymnasium.

Other Activities

Each year the Intramural Council sponsors student dances in co-operation with the college social committee. The annual "Barn Dance" which features square dancing has always been well attended.

Publicity

Students engaging in any competitive activity whether on a collegiate or intramural basis enjoy reading about the success of their particular team; and being human, they also like to see their own names in print. The college weekly newspaper carries several stories each week on the progress of the various teams as well as the results of the previous week. All of the stories are written by college reporters. Stories also often appear in the daily city papers.

Awards

As has been stated elsewhere in this report, our program includes a definite system of points and awards. This does help to bring more students into the program but this phase of our intramurals is not overemphasized. The award that is given a person after he has obtained a high standard of proficiency in a variety of activities.

Intercollegiate Sports

The intercollegiate program of Hardin is in no way connected with the administration of the intramurals. The college participates in basketball, tennis, golf, and track and field in a recognized junior college athletic conference. The coach of these activities and the college administration officers make no attempt to offer special inducements to athletes to come to the institution in order to produce a winning team. Very often, and incidentally, the best players in the intramural sports are candidates for the varsity team. Almost every year the outstanding players on our college basketball team have obtained all of their previous training and experience in the intramural program.

Finances

In some colleges the intramural program is financed under a separate budget. At Hardin there is no separate budget. The intramural program is financed by the annual budget of the physical education department. The same equipment is used by both divisions. It is necessary, however, to finance the intercollegiate program under a separate budget. It would be difficult to determine the per capita cost of the intramurals alone but if this were possible, it would undoubtedly show that the cost would be very low.

Facilities

Our college plant is quite new and was constructed with the aim in mind of providing the most sanitary and comfortable buildings possible for the students. There is one maximum sized gymnasium floor on which all indoor team games are played such as basketball, tennis, badminton, and volleyball. For other outdoor activities there are four concrete courts, one croquet court, several horseshoe courts, a sodded football field, one softball diamond, a sixty-foot Bermuda gold green, and an archery range for three targets.

Officiating

One of the important outcomes of our intramural program is that several students are given opportunities to officiate the various games. It is hoped that the students will do all of the officiating and for the most part, this is true. With this ability the boys and the girls have learned something that will be of use to them in later life. Every year students from Hardin assist in county and district basketball, volleyball, and track and field meets. Some of the boys have even officiated rural basketball tournaments without charge and with a great deal of efficiency and satisfaction.

Looking to the Future

We at Hardin Junior College realize that our program is not yet what we would like it to be. In the future there will be concerted efforts made to increase the number of students participating in the program. More activities must be added and the time allotted to intramurals will have to be increased. Our adopted slogan, "A sport for everyone, and everyone in a sport," certainly keeps the directors of the program constantly looking forward.

CONCERNING THE POST-WAR PROGRAM

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What will the post-war years demand of physical education and what will physical education have to offer? What will the biological needs of the American people be in the period of reconstruction which will follow the years of debilitating struggle? Surely, inroads will be made on the physical structures of men and women just as inroads will be made on their social institutions.

While it is true that problems relative to the assurance of victory must first be solved, few will deny that the war years must constitute the hatching period for the plans of future physical education programs. Certainly, foresight in this direction will be to the advantage of our profession and the people we serve. In fact, there is reason to believe that lack of foresight may have been responsible in part, for the present, doubtful status of physical fitness of the American people. Selective service records indicate that "about 40 per cent of the young men of our country at ages 21 to 35 are either considered physically unfit to enter training for military service or are fit for limited service only."[1] While the leading causes of rejection constitute, in the main, medical and dental problems they do have implications for school and public programs of health teaching and physical education.

It seems a fact that the health status of young men has not improved in the past quarter century. In view of the fact that this same period has been the so-called period of greatest progress in American education including physical education, it would appear that there has been leakage somewhere along the line. Either that or the methods and contents of the physical education programs of this period have not produced. Perhaps the method and program changes have been too rapid though it may be that our forces have been spread too thin. Perhaps in our hurried march we have deliberately discarded or carelessly lost sight of some of the basic values. Indeed it may even be that in our attempts to get everyone into the program we have gone overboard on the recreational end to the extent that table tennis, social dancing, bowling, golf, riding and similar activities have eased out of many programs the strength and stamina activities which seem now to be so valuable.

The writer fully appreciates the values of recreation—as a part of the complete program, not as the complete program.

It is sometimes the case that new objectives cause old and basic objectives to be lost sight of.

[1] Health Problems in National Defense. *American Journal of Public Health*, 31:969, Sep. 1941.

Educational objectives of the past quarter century have emphasized social values, i.e., the preparation of citizens for efficient group living. Certainly, there is no questioning such values for life in a democracy. Yet there are those who feel that in the emphasis on the new objectives certain fundamental values and skills have been lost. Possibly such has been the case with physical education. It may be that recent programs of physical education, while broadened in scope have lost sight of those basic activities which are the source of organic power. It may be that in the process of socializing the program we have sterilized it. Can it be that the larger muscles have fallen into disrepute? Can it be that sweat is something to be associated only with "physical training?"

From current information one gathers that American men and women are greatly in need of physical conditioning in order that they may withstand the strain of an all-out victory effort. Prospective selectees, too, must be conditioned physically; defense workers must be recreated; housewives must be taught nutritional values and first-aid and health information must be brought to the educational door step of every individual. What have we been doing all of this time? These deficiencies are a reflection upon recent educational programs, both school and public.

From all of this comes the feeling that in a democracy, only in war times must a nation be strong; that in times of peace living for the present is adequate. It is indeed unfortunate that to date these attitudes have been paramount though probably unintentionally so and it is unfortunate for us that the aggressor powers did for many years previous to the present conflict, train and condition their people to a peak of physical efficiency. Is it not our problem to insure that the post-war years shall not see a repetition of this complacent, easy going attitude?

How shall we meet this problem? We must take inventory of our job to-date. We must ascertain the physical and hygienic weaknesses of our people at the various age levels; what age groups are best prepared; what activities are proving now to be of greatest value; what now, seem to be the weaknesses and the major contributions of current physical education philosophy. We must formulate objectives, plans and programs for the future with these facts in mind.

We must feel and cause to be felt the ever-present need for health and physical fitness. We must emphasize that a physically strong nation is ever prepared for periods of emergency and that such preparation is not necessarily a totalitarian technique. We must evaluate our present programs in terms of maximum contributions. We must coax from the stadium seats to the turf of the playing fields more young people and adults. We must extend our programs on a broad scale while making them meaningful to all. We must increase our numbers that trained leadership will be available for this broad program. We must come to a decision concerning the methods and contents of graded school hygiene or health education courses and insist that such courses do more than occupy space in the educational curriculum. We must insist upon more adequate preparation for all teachers, for health teaching. We must educate those reluctant administrators who have refused to direct complete educational programs. We must cause to be opened the purse strings of the local, state and federal agencies which are responsible for the physical fitness of a nation for after victory our program must be broader and more efficient than ever.

FEAR IN RELATION TO CHILDREN'S SKILLS

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Only recently, three years to be exact, have we known much concerning the tremendous variety of fears from which children suffer. Dr. Arthur Jersild of Child Development at Teachers College is responsible for our increased knowledge. His research has shown us certain values and possibilities in working with fears of children.

We have hitherto been able to talk some children out of certain fear or help others to transfer fear to something else, but as a whole, we have accepted fears as simply a part of childhood.

Jersild[1] lists common fears under twenty-four large categories:

1. Animals.
2. Specific objects and situations.
3-7. Sudden, rapid, or unexpected movements, also lights, flashes, shadows, reflections (except lightning); sudden or unexpected movement of objects.
4. Lightning.
8. Noises, agents of noise, objects and events feared by reason of association with noise.
9. Falling, danger of falling, high places, etc. (falling, slipping, sliding, etc.; high places,

[1] Jersild, Arthur T. and Holmes, Frances B. *Children's Fears*. Bureau of Publications, Teachers College, Columbia University, New York, 1935, pp. 114-116.

possibility of falling; going up or down in elevator).
10. Pain, painful situations.
11. Strange objects and situations.
12. Strange persons and unfamiliar variations connected with familiar persons.
13a. Threat or danger of harm from specific persons, fighting, pursuit by persons, being confined by persons.
13b. Fire.
13c. Danger (real or imagined) of accident, harm, or injury in specific situations or through specific non-personal causes, such as dangers of traffic, accidents, drowning, etc.
14a. Specific individuals and events feared due to warnings.
14b. Apprehension over punishment for misconduct.
15. Signs of fear in others.
16. Loss of property. (No fears occur in this category.)
17. Dreams and nightmares, contents of dreams and nightmares.
18. Fear of or apprehension over personal failure, ridicule, appearing or performing in public (failure in school, feeling of inadequacy, worry over future status).
19a. Fear of dying or ill health.
20. The dark, being alone in dark, imaginary creatures or dangers feared when in the dark.
21. Loss or death of relatives.
21b. Being alone and imaginary dangers when alone.
23a. Supernatural or imaginary creatures not including creatures mentioned only in connection with being alone or in the dark.
24. Characters met in stories, radio programs, and motion pictures, and projection of self into action and dangers of stories and pictures heard or seen.

Jersild goes further in saying that most treatment of fear is curative and not preventative; so much work has been done through the negative to the positive rather than through a direct positive attack.

By no means do teachers and parents realize all the fears which beset the child. More often than not children suffer in silence and the fear grows and grows.

According[2] to the results of studies an important approach to the overcoming of fear is the bringing of the child into active and successful encounters with the thing or situation feared. A graded approach is essential as much harm may otherwise be done.

But even more important and successful than this, is, so Jersild found, the cultivation of skills. Again, and again, and again has this been true. These skills must emphasize motor activities. The child unskilled in motor activities is likely not only to develop more fears for himself and his safety, but by the very fact of his lack of skills may surround his social relationships as well as his own self-confidence with inhibitions built on fears.

Fears change somewhat with the maturation of the child, hence Jersild advises a complete revision of physical education in terms of needed skills, habits and adjustments as a positive, curative and preventative treatment of fear. Jersild goes even further advancing the principle that where there's a skill there's a way not only in doing specific motor skills, but also in the achievement of emotional balance and personality adjustment.

[3]The knowledge that possession of motor skills is a positive aid in overcoming fear places a greater responsibility upon the teacher for understanding and managing the emotional elements in personality.

In the teaching of physical education, the fear reactions which are frequently found are those incident to physical injury and to injured feelings. However, fear reactions toward climbing or toward physical contact with others, fear of stronger children, fear of physical injuries resulting from the many kinds of falls and bruises possible in physical education activities, fear of incurring the censure and criticism of the group for awkward and fumbling responses are all among the fears encountered in the conduct of physical education activities. It is in the acquirement of motor skills that correction of such fears largely resides. To the child who can perform well the stunts that all children wish to do, comes a confidence that flows from knowledge of achievement and also from group approval.

The method of teaching must adjust itself to meet the emotional needs of the group to be taught. This requires a peculiar sensitiveness on the part of the teacher, which recognizes the behavior warnings indicating the sway of the constructive and destructive emotions. A method which is always informal, natural and social is best adapted for enabling the teacher to keep a finger upon the emotional pulse of the group; such method, because of the close association of teacher and pupils, may be expected to circumvent the slow smoldering of the undesirable emotional responses, to disclose hidden fears concerning motor performance or social relationships, and to encourage the worth while and constructive reactions. Hand in hand with this method goes the absolute necessity that the teacher typify in behavior and in precept the desirable qualities, controls, and knowledges which are being sought for within the pupils.

[2] Jersild, Arthur T., "Development of Children." *Teachers College Record*, November, 1936, p. 134.

[3] Williams, Dambach and Schwendener. ***Methods in Physical Education.*** W. B. Saunders Company, Philadelphia, 1937, p. 112.

TECHNIQUES USED IN A FUNCTIONAL HEALTH SERVICE PROGRAM*

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Detroit for many years has had, and now has, a very broad health program. The organization of a Health Service program, however, varies in the schools. This report will have to do with the techniques now being used in the organization of the Health Service Program in the Nolan Intermediate School in Detroit. In Detroit the term "Intermediate School" is synonymous with the Junior High School in many localities. It means a school which serves children from the 7B through the 9A grades.

Nolan Intermediate School is one of 22 such schools in Detroit. It has an enrollment of about 1000 boys and 1000 girls who come from middle class families. It has a staff of 59 teachers. The Health and Physical Education Department claims six of these teachers, three men and three women. These teachers have the advantage of a complete health unit, 2 gymnasiums, 2 swimming pools and 2 health rooms. The writer is one of these six full-time teachers of health and physical education. In addition she is in charge of the Girls' Health and Physical Education Program. At present the writer is acting as chairman of the School Health Program.

The Intermediate School is organized around the homeroom. There are 45 of these homeroom groups at Nolan. All pupils meet in their respective homerooms every morning for a period of 30 minutes. The homeroom teacher is responsible for the records of the pupils in his homeroom. The homeroom teacher knows more in all ways about these pupils than any other single teacher in the school. Please keep this last statement in mind as I shall return to it presently.

Before we started our health service program the health data within the school was not centralized nor was it very complete. Some follow-up work was done. Some corrections were made but no one could say how many. Most teachers knew very little concerning the health status of their pupils. We definitely needed a Health Service Program.

In September, 1937, the idea of a Health Service Program was suggested to the eight teachers who had 7B homerooms at that time. They saw the need of a Health Service Program of some kind. Together with the teachers of Health and Physical Education and with the full support of Mr. Norman Arthur, the principal, they formulated four objectives and worked out the techniques for accomplishing these objectives.

These four objectives were and still are as follows:

1. To acquaint the homeroom teacher with the physical status of his pupils.
2. To widen the stimulation given in getting physical examinations by private physicians.
3. To have a more thorough stimulation given in getting defects corrected.
4. To acquaint the classroom teacher with the physical status of any pupils whose defects might affect their "behavior" in the classroom.

Semester by semester we presented and sold the program to the new 7B homeroom teachers until now, at the end of 3 years, it is in operation throughout the entire school.

I shall now take each objective and explain the technique being used at the present time toward meeting this objective and the progress to date in reaching this objective.

The first objective is to acquaint the homeroom teacher with the physical status of his pupils. Going back now to the statement that the homeroom teacher has more information about his pupils than and other one teacher, it is a logical conclusion that the homeroom teacher also should know the health status of these pupils. At Nolan we use a Homeroom Health Card for this purpose. A card is made out by the homeroom teacher for each pupil when he enters the Nolan School. This card is kept in the homeroom. It follows the child from homeroom to homeroom until he leaves school when it is filed in the principal's office. A copy of the health data is sent on to the high school. It is on this homeroom health card that all health information from all sources existent in the school is recorded.

One source of information is the child's private physician. It is necessary here to point out that Detroit places the responsibility for the physical examination of the child with the parents. The Board of Health supplies a form on which the private physician records his findings. These forms are distributed to the pupils through the schools and are returned by the pupils to the schools. Children are required, wherever possible, to present these forms three times in their school careers: upon their first entrance to school, upon their entrance to intermediate school, and upon their

* Report given to the Administrative Measurements Section of the American Association for Health, Physical Education, and Recreation, Stevens Hotel, Chicago, Illinois. Friday, April 26, 1940.

entrance to high school. It is these forms "turned-in" in intermediate school with which we are concerned. At Nolan this examination from the private physician is returned to the homeroom teacher. This is the only intermediate school in Detroit where this is done. The homeroom teacher transcribes the information from this form to the Health Card. This is a relatively simple task since the items on the health card are the same and appear in the same order as those found on the form itself, except that we have added a few items, including a space for records of interviews. Thus the homeroom teacher gets, first hand, the private physician's statement concerning the child's health status.

Another source of information is the health records from elementary school. These records are filed in the principal's office. It is the responsibility of the chairman to transcribe to the health card the records of defects for pupils who have not presented private physicians' reports to the homeroom teacher.

Other information comes from the Health and Physical Education Department. Once each school year the health and physical education teachers examine each pupil in certain physical characteristics, such as eyes, ears, tonsils, teeth, etc., using the screening technique. It is the writer's responsibility to transcribe the findings of these examinations to the homeroom health card.

Still other information comes from the school nurse. The nurse is responsible for the follow-up work on serious defects. Records of health information which she collects are kept in the school clinic. When a child is interviewed by the nurse he takes his health card with him. The nurse is responsible for recording on the card any additional information which she may have.

Finally, some information comes from teachers' observations, notes from parents, etc.

So you see the homeroom teacher has as complete a record of the health status of his pupils as it is possible to have. Moreover this information is in a very usable form.

The second objective is to stimulate all pupils to get physical examinations by their private physicians. The homeroom teacher comes in contact with his pupils every day. He knows which ones have not presented physicians' reports. He knows whether or not a child can afford an examination or whether he just needs to be reminded to get one. He is in an ideal position to "push" this matter of getting examinations. That conditions in this respect have improved is shown by the fact that before homeroom teachers were responsible for such stimulation only about thirty per cent of the children were getting examined, whereas now about sixty per cent of them get examined. This means that we have a picture of the health status of our school population twice as complete as we had three years ago.

The third objective is to have a more thorough stimulation given in getting defects corrected. The homeroom teacher again is in an ideal position, this time to follow-up defects. At Nolan he does this several times throughout a semester, being guided by the information on the health card and recording thereon any treatments and corrections which he discovers. At this point in the development of the service program I can state only that where before we had no record whatever of the number of defects or corrections, we now do have our health data in such a form that we can readily get such a record. A survey in June, 1939, showed that 742 pupils out of 1220 had 1033 defects in five items, namely, tonsils, teeth, cardiac, eyes and ears. In the two years our program had been in operation we had 128 corrections, mostly teeth and eye corrections. The report of June, 1940, will include the entire school and because of this will present the first figures from which we can guage our progress in the future.

Now all of the above organization is but the ground-work for the realization of what I believe is the most important objective of all: the fourth, and last objective, which is to acquaint the classroom teacher with the physical status of any pupils whose defects might affect their "behavior" in the classroom. I use the word "behavior" in its broadest sense.

Since the homeroom teacher has a complete record of the health status of each of his pupils, he is the one who most easily can acquaint the classroom teachers with pertinent health information. We have established what we call a *Health Status Report*. This is a report from the homeroom teacher to the classroom teachers with whom his homeroom comes in contact. The homeroom teacher is supplied with mimeographed forms on which to list the names of pupils who have defects which might affect their "behavior" in the classroom. The homeroom teacher makes two lists, one of boys and one of girls, since boys and girls are programmed differently in some subjects. Because this information is confidential, envelopes are supplied in which to circulate these lists.

The homeroom teacher then personally takes the lists or sends them to the classroom teacher at the time his homeroom group is in the classroom. This gives the classroom teacher the advantage of actually seeing the pupil who has the defect so that adjustments can be made if necessary, such as moving children with poor vision or hearing from the back to the front of the room. When finished with the report, the classroom teacher signs the envelope and returns it to the homeroom teacher who sends it on to another classroom. This method of circulation is used rather than sending the lists

with a child from the homeroom because of the confidential nature of the report.

This *Health Status Report* is circulated as early as possible in each semester, about the third week of school.

Thus the classroom teachers *are* notified. There is no way to measure the degree to which classroom teachers use this information but I know they do use it—they themselves say they do. In fact they are eager to tell of how they adjust seating arrangements, do not send cardiac cases on errands, or expect hernia cases to carry heavy loads. The greatest evidence of their interest in knowing the health status of their pupils is found in their wholehearted cooperation in the entire health service program, both as homeroom teachers and as classroom teachers.

As to the adaptibility of this *Health Status Report* to other Health Service Programs, I believe that in any program where the health data is centralized, such a report could be and should be circulated to classroom teachers or special teachers.

By way of summing up the Nolan School Health Service Program we may say that it is a program in which the physical health data is consolidated and then circulated among all teachers. It also is a continuous program for stimulating children to get physical examinations and for encouraging the treatment and correction of defects.

The children are being educated, and through them the parents; the homeroom teachers are being educated; and, the classroom teachers are being educated.

REPORT OF COMMITTEE ON OBJECTIVES OF PHYSICAL EDUCATION*

The purpose of this committee is to demonstrate that the following objective of physical education is attained by the students who participate in the Los Angeles physical education program. This objective is: "To promote organic vigor through motor activities."

The committee wishes to submit a rewording of this objective for the following reasons:

The wording is such that it makes it impossible to prove that the objective is reached. The physical education program is only one of many factors responsible for the child's physical development.

Exact interpretation of the phrase "promote organic vigor" is extremely difficult. Explanation to the layman is therefore impossible.

Feeling that the following may overcome some of the difficulties encountered in the objective as originally stated, we suggest for consideration—"to stimulate organic functioning through motor activities suitable to the child's capacities." We feel that this statement is more suitable for the following reasons:

There are no vague claims resulting in diverse interpretations.

Medical science agrees that to stimulate organic functioning is beneficial.

It is not difficult to prove that physical education activities stimulate organic functioning.

This objective recognizes physiological differences in children.

The committee wishes to state that this is merely one interpretation of this objective. Other committees and other individuals may make different and more adequate restatements. The committee does not claim to be composed of expert analysts, it merely feels that this phrasing forms a more practicable foundation upon which to base investigations.

The committee feels that it cannot demonstrate conclusively that physical education activities promote organic vigor, for the following reasons:

The committee was unable to locate any adequate tests.

Experimental controls cannot be established as it is impossible to observe students during a twenty-four hour period.

Home conditions are extremely variable.

The type and amount of vigorous activity engaged in outside of school are variables which cannot be controlled, nor their effects measured.

However, the committee feels that its rewording of the objective gives a better basis for further study and has formulated its plans accordingly.

The following is a brief statement of the work that is planned for the future.

There are two lines of investigation to be pursued. The first is that of studying the effects of motor activity on the various systems of the body. The second is that of showing that the students, by participating in a physical education program, achieve these desired results.

The committee proposes to study the effects of exercise on the body by referring to literature and experiments in the fields of medicine, physiology, and physiology of exercise.

The next step will consist of listing the physical education activities offered in the city schools for the various grade levels. Then we shall attempt to show that the participants in these activities receive the physiological benefits described above.

* Committee made up of Uhlan Henderson, Margaret Moon and Marjorie Miller, Chairman, teachers in secondary schools, Los Angeles, Cal.

A PRACTICAL COLLEGE BACKGROUND FOR MAJOR STUDENTS IN PHYSICAL EDUCATION

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The values inherent in the modern physical education program are gradually being recognized by most progressive educators. The public, however, as well as the majority of educators, is still ignorant of the real purposes of physical education. Williams' and Brownell's statement of the average layman's conception of the field, "muscle and massage; perspiration and peristalsis," is an apt point. It seems almost superfluous to say that physical education does not have the standing and prestige of other branches of education. At the same time, this fact is face-to-face with the front ranking given to health aims and leisure activities in every listing of general educational objectives. Such a paradox is unwarranted. The quantity and quality of life preparations, presented in a sound physical education program, are equaled by no other didactic field.

Aside from the "youth" of modern physical education, the major factor which limits the full acceptance of our field is the very practical reality that most people have no conception of our philosophy, our aims, or our means of getting results. This situation, which produces a natural attitude of skepticism toward our work, is the logical result of the quality of actual work being done in the field by so-called "physical educators." In but too few situations are the people representing our calling doing a creditable job. The most widely found program, casual supervision of free play activities, has not influenced too greatly the further acceptance of physical education as a completely valid field.

Several answers can be advanced as to the reasons why many men and women in physical education are not doing a good job. However, one response that appears an obvious observation is that a number of people teaching the subject lack adequate training. The presence of these individuals in the field has three causes.

First, school administrators have tended to hire college athletes, rather than physical education majors, with the purpose of attempting to produce outstanding interscholastic teams. Aside from the philosophical implications involved in such an action, there is little clear thinking evident in the belief that a "has been" athlete will turn out better teams than a man well-grounded in both athletics and educational practices. The method of athletic coaching is merely learning by doing—a synonym for physical education.

At any rate, we thus have literally hundreds of "physical educators" who majored in anything from business administration to journalism. Of course, a few of these people are a definite credit to the field, but, in general, a sound program cannot be expected from untrained leadership.

A second cause of unqualified personnel is the "general secondary" teaching requirements found in an increasing number of states. These usually require a definite amount of academic background, with a substantial major, and as such they are a noteworthy educational advancement. The weakness, however, is the fact that when the requirements have been fulfilled, the teacher may then legally teach any subject on the secondary school level. Physical education again becomes the "goat," when administrators of small schools hire science or English majors to fill corresponding gaps in their staffs, and then also assign the physical education program to them. The application forms of teacher placement agencies do not without reason ask, "can you handle physical education?"

As a last example of how untrained people have become identified with physical education, we must recall the situation of the field after World War I. Physical education was suddenly forced upon the schools throughout the country causing a demand for qualified teachers that could not be met for years to come. Some of the men and women who were drafted in the early 1920's have remained in the field to become our present leaders. Many others of this group, though, have never kept up with contemporary practices. An amazing number of these people still conduct "programs" which consist, in general, of calisthenics and/or varsity athletics.

Overcoming this handicap of having many of our co-workers inadequately trained, presents a dynamic problem in the field. In aiming at the logical goal of "physical education by physical educators," we must begin at the roots, and work up the hard way. As a first step, the colleges and universities which are producing future physical educators must take stock of their training programs.

It is almost unnecessary to point out that at the present time different schools of physical education are recognized as stressing different aspects of the

program. Such everyday professional comments as, "they turn out good intramural men," or "graduates of that school are excellent apparatus performers," are, sadly enough, often too literally true. Many of the schools seem to have lost sight of the fact that their prime function is to train competent secondary school teachers, not merely limited specialists.

The students that are turned out by our schools, each June, as qualified physical educators, should be just that. Administrators should be able to expect of them a certain minimum academic background, whether the student is a graduate of Oregon, Wisconsin or N. Y. U. This need calls for some standardization of training in schools of physical education.

As a humble beginning in this direction, the author has chosen four criteria to serve as basic needs of every teacher training program. On each of these bases, a minimum number of tools necessary for doing a good job of teaching in the average secondary school situation, have been suggested from the author's own experience. These standards, around which course materials have been suggested, are: (1) a philosophy of education; (2) the needs of adolescents; (3) aims and objectives of physical education; and (4) necessary teaching techniques, methods and procedures.

A Philosophy of Education as a Basis for Physical Education Teacher Training

Progressive educators accept the view of the child as a complex and individually unique organism. The mind-body dichotomy has been discarded in favor of a single, integrated concept, in which we no longer attempt to categorize the "trainings" of the child into units. Various intellectual powers do not come about through specific habit formations. Such responses are not an atomistic type of thing, but are rather types or wholes, and as such they must be taught. The content of mental life is made up from the beginning of organized systems of consciousness and response to situations. It is the whole of a thing that has meaning.

In the words of Collins and Cassidy:

> The acceptance of an organismic psychology and philosophy of education directs these purposes toward a recognition of the uniqueness of each individual as a psychosomatic unity, who brings to each experience a past history and interacts in his immediate environment in terms of this past as well as in terms of the conditions of the present.[1]

Conceding this unit idea, a philosophy must now consider the "end" or purpose. How can we best serve each individual? What do we want to do for him?

[1] Collins and Cassidy. PHYSICAL EDUCATION IN THE SECONDARY SCHOOL; Progressive Educational Association, New York, 1940; pp. 22-23.

There is little opposition, in current educational circles, to the philosophy that makes the prime function of education that of preparing the child for "living." Rogers says: "The ultimate criterion of the propriety of any educational program, method, or aim is the relation to life objectives."[2] While Collins and Cassidy tie this aim to their psychophysical unit with: "This organismic concept views the responsibility of education as that of helping the individual to find himself and to help him meet the persistent and persuasive problems of living."[3]

Within slight variations, the thoughts expressed herein represent the general trend of thinking of the leaders in physical education concerning what we are working with, and what ultimate results we are attempting to achieve. These general ideas have been accepted, and each major student should be able to clarify his own thinking in roughly parallel form. It seems that the minimum necessary background for such a process must include:

(1) The philosophy of education, dealing with historical, analytical, and interpretive implications of changes in educational theory.
(2) The history of education.
(3) An introductory view of the general field of sociology, presenting the fundamental concepts and problems of society.
(4) A general survey of the facts of human psychology.

The Needs of Adolescents as a Basis for Physical Education Teacher Training

In a statement of our basic philosophy, we agree that education must serve the child. The next step, then, must logically be to arrive at some agreement as to the needs of adolescents that lead toward our accepted end.

Harl R. Douglas lists among the more important problems of youth the following needs:[4]

1. To find a satisfying place among fellow youth. . . Upon the solution of no other problem perhaps does the wholesome personality of the individual so much depend.
2. To experience personal achievement. Closely allied to the desire to find companionship and admiration among fellow youth is the desire to have "abilities" . . .
3. To maintain health and maximum efficiency. . . . Hygiene, exercise, prevention of disease, preservation of teeth, and maintenance of physical efficiency play a large part in the thoughts of youth today.

[2] Rogers, F. R. EDUCATIONAL OBJECTIVES OF PHYSICAL ACTIVITY; A. S. Barnes and Company, New York, 1929; p. 3.
[3] Collins and Cassidy. Op. Cit.; p. 23.
[4] Douglas, Harl. SECONDARY EDUCATION FOR YOUTH IN MODERN AMERICA; American Council on Education, Washington, D. C., 1937; pp. 30-42.

4. To participate in enjoyable recreational activities. It is not novel, nor peculiar to youth, to seek satisfying social and recreational life.

Homer P. Rainey, Director of the American Youth Commission, adds the problem of guidance as one of youth's most pressing necessities.[5] Other needs are listed by various authorities, but those herein specifically mentioned appear to be the responsibility of physical education. It is evident, at least, that many of the immediate needs of adolescents can be satisfied in a well conducted physical education effort. The teaching of skills, the provision of directed social opportunities to use these skills, and the provision of concomitant and formal contributions toward health, are all established phases of our program. The guidance factor is one which should be developed further. No other teacher in the school situation has the rapport with the students that is experienced by the physical educator, and of such a propitious circumstance, we should take full advantage.

To be able to deal adequately and profitably with the problem of adolescence, the physical education major should include the following minimum coverage in his collegiate work:

(1) A general survey of biology.
(2) Elementary physiology.
(3) A thorough study of adolescent psychology.
(4) A study of genetics, covering the growth and development of the individual from conception through adolescence.
(5) A study of the methods and techniques of counseling, including an overview of the literature relating to guidance, and a survey of problems affecting success and failure among students.
(6) A course stressing sex, marriage, and family relationships.
(7) A study of the psychology of play and leisure time activities in relation to social and economic factors.
(8) A thorough coverage of recreational sports and activities, including a great deal of field experience in directing various-aged community groups.

Aims and Objectives of Physical Education as a Basis for Physical Education Teacher Training

Because physical education activities are enjoyable in themselves, and because physical education takes place in a social situation, we in the field have an unparalleled opportunity to contribute to the general education of the individual. We have already concluded that our chief purpose is to turn out useful citizens equipped, in as large a measure as possible, to successfully meet the many vicissitudes of life. To show the way toward such a realization, objectives which satisfy immediate needs, as well as subscribing to more remote aims, must be established.

It was during the first World War that people in our field first began to make unsubstantiated claims for the program, and the trend has never entirely disappeared. "Research in . . . physical education has been so small in amount that little is known as to what really can be accomplished. Much that is unproven has been assumed and defended upon . . . the shaky grounds of uncontrolled experience-observation."[6]

Carelessness in setting up objectives for any type of activity should not be tolerated. However, until research techniques, more adaptable to measuring physical education processes, become available; and until more opportunity is provided for qualified people to do research along these lines, students must rely on the theories of our present leaders.

All texts contain lists of objectives for physical education. These range from numerous, long-winded statements to a few, concise sentences. Some seem obvious, some questionable, and some appear to be wishful thinking.

These varied statements, however, boil down to show a close agreement between most authorities on certain fundamental things that they believe our program can do. Universally well thought of objectives are:

1. Contributions to physical and mental health.
2. Contributions to skills and abilities.
3. Contributions to knowledge, habits and attitudes.

Collegiate preparation that will allow the major student to critically evaluate these and other current offerings, in the light of his own particular situation, should include:

(1) An orientation course dealing with the relation of physical education to general education and to the general culture pattern of our country.
(2) The history of physical education.
(3) A familiarity with the background, work and writings of most of the contemporary leaders in the field.
(4) A knowledge of tests and measurements in physical education, including enough elementary statistical procedure to enable the student to understand the literature of the field.
(5) A survey of the principles, problems and practices of secondary education.

[5] Bell, H. YOUTH TELL THEIR STORY; American Council on Education, Washington, 1938; Foreword.

[6] McCloy, C. H. PHILOSOPHICAL BASES FOR PHYSICAL EDUCATION; F. S. Crofts Company, Inc., New York, 1940; p. 27.

Necessary Teaching Techniques, Methods and Procedures as a Basis for Physical Education Teacher Training

Last, but certainly not least, are the abilities that the major student must acquire in order to teach. In addition to a satisfactory philosophy, and to usable aims and objectives, the educator still needs tools.

The physical education teacher must be able to "perform" adequately in an amazing number of situations that are not mentioned in current education texts. The training schools can, however, ease the shock by providing more emphasis on practice teaching. The current typical supervised teaching program—one semester of teaching a specific activity in a university high school, where the student teacher handles a group such as he will never encounter again—has little practical value. The actual class procedure is not usually what causes difficulty. It is, rather, "behind the scene" realities such as dispensing soap, marking fields, teacher liability, appeasing people, lockers, luncheon-club talks, handling game crowds, athlete's foot, newspaper contacts, finances, cleaning the pool, etc., ad infinitum. A true appreciation of such real, everyday problems, and the ability to handle them, can only be gained through actual contact. Much more time than is usually allotted at present should be devoted to practice teaching, and this training should be spread over all phases of a typical school situation from handing out towels to supervising decorations for the Junior Prom.

Another practical change in the training program of many schools would be to devise a more equitable distribution of the time spent by students in learning skills. The theory courses of major sports should always be augmented by a thorough laboratory. Many schools spend hours of gym work in developing fine acrobats, and at the same time teach baseball or track entirely in a lecture-room. In the field, the physical educator finds little use for "giant swings," while demonstrating the technique of playing second-base, or how to take a high hurdle, becomes an invaluable necessity.

The minimum background of teaching tools for successful secondary school physical education work should include:

(1) Educational psychology.
(2) Fundamentals of speech, dealing with practical problems of speaking before an audience.
(3) The organization and administration of physical education.
(4) Methods of school health education, covering objectives and techniques, and including criteria for selecting activity and judging results.
(5) Full-day practice teaching off the campus, in units of four or six week sessions, and in both town and country schools.
(6) Fundamentals of anatomy.
(7) Fundamentals of corrective and preventive physical education, including first aid.
(8) Theory and practice of the "major" sports —football, basketball, track and baseball.
(9) A four year sequence laboratory course, covering fundamentals and advanced techniques in the following activities:
    (a) relays and games of low organization.
    (b) apparatus, tumbling and pyramid building.
    (c) rhythms: folk dancing, tap dancing, social dancing, pageantry.
    (d) water sports: swimming and diving. life saving, water polo, boating, canoeing.
    (e) winter sports: skating, skiing, sledding, ice hockey.
    (f) individual sports: boxing, wrestling, fencing, marksmanship, horsemanship, tennis, badminton, bowling, croquet, handball, squash, skating.
    (g) team sports: soccer, rugby, field hockey, lacrosse, speedball, softball, volleyball.
(10) Intramural and co-educational activities.

In conclusion, the course materials suggested have been made under general, broad-scope headings. No attempt has been made to set up a curriculum, a definite sequence of work, or to organize arbitrary courses. The aim is merely to offer elements that the physical educator will be able to make practical use of on the job, and that are built around four basic educational needs of all teachers.

FITNESS IN A DEMOCRACY*

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I. Lessons from History.

Childhood to the right of us, adolescence to the left of us, senescence in front of us. Nearly all showing the strains resulting from an esculator age. Individuals have been carried to school, transported to their friends' homes, driven to the city, and whisked from floor to floor on a modern magic carpet. Such a sedentary existence "short changes" nature's developmental process. It places emphasis on accessory development rather than rigorous training of the fundamental muscles and organs of the body.

Tyler[1] presents nature's plan of fundamental growth and development as follows:

> "We cannot fail to notice the immense amount of time devoted by nature to the development of the muscular system. Why did she linger so long over it before going on to the development of the brain, especially of the cortex with its mental powers? Evidently it must be of far greater importance, and have far larger latent capacities, than we have usually supposed. The muscular system is the strategic center, so to speak, from and through which we can reach, exercise, and strengthen intestine, lungs, kidneys, and all the organs essential to life, but which are beyond the direct control of the will. Hence the sturdy vigor of our ancestors and the dangers of a sedentary life."

Cannon[2] speaks of the break in the age-long habit of using the big muscles. He says: "instead of keeping the body fit" it is now "flabby and inefficient!"

These lessons from the history of the race demand attention today. They are pertinent to the problem of preparedness in a democracy such as ours. Braucher[3] expresses this in a different way when he says, "It is not hard to think bombers, submarines, destroyers, battleships, tanks. It is harder to think what are the ramparts we defend, what is contained in America's so green valleys. In times of defense it is particularly important to keep alive the central life itself which we defend."

This central life we defend has as its chief constituent *morale*. G. Stanley Hall's definition of morale further clarifies the previous discussion when it is thought of as, "the cult of condition". This condition results from the proper integration of mind-body relationships. Fears are controlled, actions are coordinated, and skill in living becomes the end product.

Skill in living becomes a primary objective in child and adult education today. Our profession controls the extent to which our students and our adult associates approximate, coordinated emotional and neuro-muscular control. We have as a group, the activities through and by which morale or "total body condition" may be trained and developed. Our representative teams as well as our individual and dual sports groups builds an *espirit de corps* within the school or group. Further, our activities build organic power (the ability to sustain effort) as no other curricular activity can do.

Where the school program in physical education is available to *all* students, morale or "total body condition" is an outcome. Graded activities and stimulating leadership produce individual feelings of success and "belonging" to a group, a school, a state, or a nation. The totalitarian countries have recognized this and have directed the thinking and acting of their youth. Granted the direction has been anti-democratic. Nevertheless, it is easily seen that a change in purpose, using the natural play or activity drives, would result in a pro-democratic set of ideals and ideas.

The ideals and ideas nutured in this program would develop a patriotism which would be the antithesis of the flag waving, hysterical type of pseudo-patriotism which existed in too many instances during the last war. Furthermore, the aftermath of deflated ideals such as "Save the World for Democracy", might be prevented. This, because the emphasis would be placed on the individual's condition, fitness or morale as it exists by itself and collectively exists within a team, the community, a state, or nation.

II. Present Status of Fitness.

It will be helpful in preparing for the future to briefly review what has been recently accomplished throughout the world in preparing for citizen fitness. Many European countries have recognized the need for programs of citizen fitness. Germany even before Hitler, promoted such a program. Hiking, gymnastics and sport clubs were formed. Many were directly subsidized by the government. Since Hitler's ascension, the program has been intensified. It is estimated that prior to the declaration of war

* Presented at The Physical Education Section, Northeastern Indiana Teachers Association, Fort Wayne, Indiana, October 25, 1940.

[1] J. M. Tyler, *Growth and Education.*

[2] Walter B. Cannon, *Annuals of Internal Medicine*, Volume 9, May, 1936, quoted in J. H. McCurdy, L. A. Larsen, *Physiology of Exercise*, Philadelphia, Lea & Febiger, 1939, page 15.

[3] H. Braucher, Our America (Editorial) *Recreation*, Vol. 34, No. 6 (September. 1940), p. 341.

one out of every three Germans between the ages of fifteen and twenty-five were devotees of sport.

Careful studies have been made in Germany on the physiology of work including (1) load, (2) rhythm, (3) rest periods, etc. School children have found to be overworked because of (1) too much homework, (2) long recitation periods, and (3) undue extra-curricular activities. Such recommendations as the following have been presented as preventive aids; (1) omission of all school work on certain afternoons, (2) no assignments for week ends, (3) restriction of home work, (4) reduction in number of separate studies, (5) reduction in number of school hours.[4]

Italy has emphasized the physiological and medical side of physical education. They have established youth organizations for various age levels. These groups are given rigorous activities and preachments in nationalism. Russia has also through their youth organizations and school systems, stressed the need for physiological and psychological condition.

Czechoslavakia since 1871 has been organized into Sokol groups which were established according to Dr. Tyrs, the founder, because: "Our task first and foremost lies in making our nation keep to its versatile vitality, which does not let nations die, to its constant and fresh strength, and to the physical, mental, and moral health, which makes the nation immune against destruction, and thus also against any standstill or retrogression, the most murderous crime committed on the nations".[5] It does not seem remiss to add that the rape of this country was accomplished by the leader of the Sokol group. This indicates the power that such an organization may have in mis-directing the destinies of a people.

In the United States, thirty-nine states have enacted laws relative to physical education or have established state mandatory requirements. These states represent 93 per cent of the total population of the country. The difficulty lies in interpretation of these laws and mandatory rulings. This lack of broad interpretation of the possible accrued physiologically and psychologically results has hindered the progress of the profession. The physiological care provided for students is infrequently available except for individuals in interscholastic competition. The same fine care, leadership, facilities, equipment and program are needed for the 90 per cent who never can make an interscholastic team. Intramurals have met part of this need, but seldom more than one-half of the pupils engage in these activities.

McCloy[6] suggests why there has been an abandonment of so-called "physical objectives" by teachers in the profession. *First,* "many physical educators had an inferiority complex. A few sensitive souls still have. We didn't quite belong to the educational fraternity; we were just 'physical directors.' The new educational emphasis gave us 'face' and, exulting in our new importance, we forgot most of the fundamentals; we didn't want to be 'strong'.

"Second, it was so easy to 'educate' with a game book and a whistle. It saved time, preparation, and the mastering of many difficult skills and the techniques of progression.

"The third possibility is that the leaders of the new educational movement, carried away by enthusiasm for this valuable addition to our armamentarium, overstressed the new—as Luther Gulick was wont to do in pioneering a movement—and gave the impression to their pupils and to the readers of their papers and books that the educational aspect of physical education was all that really mattered.

"Whatever the reason, the result has been that, when physical education went to college and added psychology, character education, mental hygiene, tests and measurements, and the new organization of principles to the curriculum, it quietly dumped most of its body-building emphasis into the educational garbage can and set it out on the curb."

He further points out that he doubts if more than one-fifth of the pupils in our physical education classes "get enough exercise to contribute materially to any significant organic stimulation—and that wide spread strength-testing has shown that in whole cities scarcely 20 per cent of the pupils have a normal amount of strength as measured by 'Rogers' Physical Fitness Index'." These norms for strength he believes have very moderate standards.

III. Future Fitness Needs.

With the foregoing thoughts before us, it clearly indicates an immediate need for critical re-evaluation. Stock should be taken and procedures initiated and developed to revamp our present physical education and athletic offering in light of present day needs.

First, the philosophy and interpretation of objectives in the field of physical education have to be streamlined for the present age. This means that the present attitudes regarding activity dosage have to be revised upward. The teacher fails to appreciate that the average child has 40 per cent greater metabolism than the adult. This greater metabolism calls for a more active, more dynamic program. Further, the objectives of our profession must appreciate that skills are learned early in one's life, if they are correctly learned. This implies an extensive and enriched program not only on the elementary level but on the pre-school level.

[4] Quoted from J. H. McCurdy, L. A. Larsen, *Physiology of Exercise*, p. 17.
[5] Miroslav Tyrs, Quoted in *The Tenth Sokol Congress*, Prague, Czechoslavakia, 1938.
[6] C. H. McCloy, *Philosophical Bases for Physical Education*, New York, F. S. Crofts, 1940, p. 76.

Our program of activities should be conceived as a pyramid with the base representing the nursery or kindergarten level. This broad base should support a large range of activities and skills. As the child progresses through school emphasis on *number* of skills and activities should diminish. Individual selection is progressively arranged for and allowed. The college student might accordingly select only one activity a semester but engage in this one extensively and primarily because it is the one in which he is the most proficient.

Health should be taught as a direct result of condition. This condition being primarily possible through wise and extensive participation in activities acceptable to the specific age group. Further, children should *only* be allowed to pass from one grade to the next, if and when remedial defects have been corrected.

Character implications of the various activities should be taught as the activity is learned. Lip service as to the character development possibilities should be supplanted by conscious and pointed learnings as the conduct situation presents itself in the specific activity. Furthermore, the teacher should, by consultation and precept, assist the introvert and extrovert make proper adjustments before, during and after activity participation.

Second, leadership in the program of activities needs to be improved in quality and breadth of background. This improvement will depend in a large measure on a complete revision of salary schedules in our schools. The elementary program of physical education, as indicated before, is considered so important that the salary schedule on this level should be at least comparable to that received on the high school level. This would allow the best teachers to accept elementary positions.

The future teachers being prepared in our teacher training schools, need a greater range of motor skills. They should be past masters of the analysis of movement. Their aim, especially among the women, should be accepting the profession as a life work. Too many times our women teachers enter the profession for a "three-year wait"—to be married. This continued replacement makes the program figuratively stagger forward with slight rises and long plateau periods in the program's execution. Perhaps it would be more efficient if men were to be placed in the grades as teachers especially after the third grade.

The needs for increased motor skill and organic power are so imperative that teachers should devote their entire time to teaching health, safety, physical education and athletics. Concentration of purpose is extremely important if our school children are to be adequately trained to meet the demands of this twentieth century.

Third, facilities need to be constructed for use fourteen hours a day. Separate entrances to the gymnasiums, swimming pools, and locker rooms should be provided: This separate unit allows for extensive use of facilities after school and evening. The equipment placed in these indoor activity laboratories should be extensive in type. Apparatus and mats should always be provided. The hazards of these activities can be met by proper leadership. Individual activity rooms should be available for fencing, wrestling, adaptive sports and the like.

It is obviously necessary that outdoor playfields, containing team game areas be provided. Space should also be provided for winter sport activities such as skating, tobogganing, etc., where the weather permits. These areas should be provided with lights for late afternoon and evening use.

Playrooms and outdoor play areas are of absolute necessity for an adequate program in the elementary school. These indoor areas should be large and well lighted by direct or artificial light. The outdoor areas need to be large and adequate for practice of the elements as well as the team games themselves.

Fourth, the program of activities needs nearly a complete revision. Activities should be included at *all* levels, which are conducive to the development of organic vigor and neuro-muscular coordination. The time allotment in the elementary level should be at least 600 minutes a week. On the secondary level, the minimum should be not less than 300 minutes a week.

The program where possible should be planned for two hour periods in the secondary level. It should be required of every student in the school. Adaptive activities should be provided for those unable to take the regular program.

Leaders should be provided in sufficient numbers to adequately supervise and teach the various groups or squads. Needless to say the activities should be classified by ability groupings. Each group should have specific goals to reach.

IV. SUMMARY.

1. Studies indicate a definite loss of organic power and skill among our school population. This is a direct outgrowth of our present mode of living.
2. The morale of a school, community, or nation, of course, is made up of a mosiac of causes. An adequate program of motor activities will materially assist in the development of a national morale. This morale is a composite of physical and social fitness.
3. Ideals of a true democracy may be indicated through an adequate program of physical education and athletics.
4. The time allotment in physical education activities of necessity should be increased to 600 minutes per week on the elementary level and a minimum of 300 minutes in the secondary level.

BRIDGING THE GAP BETWEEN CORRECTIVES AND THE REGULAR PROGRAM*

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In the swing from a formal to an informal program, in replacing free-standing exercises, Indian club drills, and apparatus work with swimming, sports, and dancing, we have run the gamut of extremes in our consideration of body mechanics. We have elevated the chest and hollowed the back and hyperextended the knees in forced positions of attention; and we have permitted rounded backs, tightened hamstrings, and pronated feet in our insistence that "the game's the thing". In the earlier days the core of our program was preventative and corrective—occasionally individualized, more often conducted as mass drill. More recently there have existed in many institutions two distinct physical education programs, one reputed to be recreational in content, the other somewhat medicinal. The corrective program is usually based on the physical examinations and the policies and practices in use may be described as follows:

1. The students may be classified according to their physical and medical examinations as A, B, C, or D. A students are permitted a wide choice of activities while the choices of B, C, and D are increasingly restricted in number and to those activities which are supposedly less strenuous. The fallacy here lies in the supposition that an activity is intrinsically vigorous or lacking in vigor while in reality the vigor of an activity is dependent upon the participant and to a lesser extent upon the leader. Dancing may be as slow and mincing as a minuet or as whirling and active as "jitterbugging"; tennis may be a matter of one or two served balls and prolonged retrieving or it may be the hard, fast, demanding game played by all of our professionals and many of our amateurs; to the uninitiated fencing may appear a highly skilled but relatively inactive sport; the experienced fencer knows a ten-minute bout to be an exhausting trial of endurance and physical stamina.

2. In some institutions students classified as having physical defects are required to report for corrective classes until the defects are corrected—or until either the patience or optimism of the instructor is exhausted.

3. In still other institutions students found to have physical defects are advised of their condition and offered opportunities for improvement through supervised individual work and corrective classes.

4. The policy of a few institutions has been to meet the social and recreational needs by requiring or offering a dual program to those in need of correctives, one which is remedial and the other recreational. This policy has presented serious difficulties in accrediting and scheduling but seems to be essentially sound. It is suggested that the corrective classes be accredited to the extent to which they offer truly educational experiences; the extent might differ with the individual but an effort should be made to make the student capable of self-direction as soon as possible.

In many cases, the student exposed to a corrective class is faithful and hardworking; he gains in flexibility, strength and control and for the duration of the course at least there is marked improvement in his postures; all too often when the course is completed the improvement stops. The student plays tennis, swims, dances, and rides, but his posture consciousness wanes and in a few short months or at best a few years his condition is as bad as it was formerly. It is essential that guidance, supervision, and if necessary, remedial treatment be continued over a long period.

Enrolled in the activity classes of our colleges and high schools are many students whose skill and pleasure are limited by poor balance, restricted range of joint mobility, weak musculature and lack of control due to ineffective postural reflexes. In some cases these conditions are so generalized that only years of patient effort can bring noticeable results, but in many cases the conditions are quite specific and will yield in a reasonably short time to specific treatment. A teacher of a given activity should have sufficient knowledge and understanding of the body and of the activity to recognize efficient body mechanics within the activity; when deviations occur which do not yield to teaching methods, a procedure should be set up for the student's help.

The most useful and practicable corrective program should serve to receive students from and to return them to the recreational activities sponsored by the department of physical education. Although corrective classes may be conducted in a manner to make them enjoyable and "fun" for the participants, their purpose is essentially utilitarian rather than recreational. They are designed to offer a means to an end rather than to serve as an end in themselves. For the best functioning, there must be integration with the more comprehensive program.

* A paper presented before the Therapeutics Section at the Convention of the Southern District of the American Association of Health, Physical Education, and Recreation, Louisville, March 26, 1941.

The skill and pleasure of a student in a specific physical education activity may be improved through corrective exercises. Several examples may be cited:

1. A devoted addict of basketball who plays the position of guard with unusual intelligence and mental stability finds it exceedingly difficult to maintain her balance. Her passes are erratic, she falls into her opponents, and she is slow in shifting. Upon examination it is discovered that, though her standing posture is within the normal range, her hamstrings are tight, her pectorals are shortened, her feet are inflexible, and there is limitation of movement in the spinal column. It is at least probable that increasing the range of motion through stretching the shortened tissues in the areas mentioned, together with improvement of tone in the antagonistic muscles, would result in better balance, better basketball, and a more useful body.

2. Two students in a beginning swimming class are repeatedly hitting flat in attempting to learn the fall-in dive. After many instructions to "lean way over" and "come in closer" the instructor discovers that shortened hamstrings and limited flexion in the lumbar spine make it impossible for the students to follow her instructions. The students' problem can be solved temporarily by having each lift one leg backward, thus partially releasing the tension in the hip and lower back. A more satisfactory solution may be gained by regular stretching exercises taken over a period of several weeks or even months.

3. A student with unusual skill in dancing finds herself limited in character portrayal and in the representation of mood and quality because of a contracted chest and a forward head. Although her feet do honor to her twelve years of instruction in the dance, her body contour lends a monotony to her dancing which is quite evident to her observers. The acquisition of additional flexibility, strengthening of the weakened musculature, and control of the relationships of the body segments first attained through volition but gradually transferred to the lower centers should make of this young woman a better dancer and a better poised and more graceful person.

4. The rather distinctive positions which are fundamental in fencing are achieved and maintained in part through the elasticity and strength of the tissues around the ankle, knee and hip. A promising young fencer with neat parries, fast reaction time and unusual strategic sense was repeatedly thrown off balance by her inability to maintain efficient positions of the feet when lunging and on guard. An accident to the right leg several years ago resulted in a shortening of the tendo-Achilles; this condition was also found to be present to a lesser degree in the left leg. The student habitually used her feet in slight eversion although they appeared normal in flexibility and strength. Correction of the foot position and continued tension of the tissues on the back of the lower leg and ankle with exercise of the dorsi-flexors of the feet produced noticeable results within a few weeks.

A student having achieved some improvement through corrective exercises may experience further improvement and pleasure through a carefully chosen and supervised recreational activity. This statement may be substantiated by describing several illustrative cases:

1. A student was referred to the corrective class with third degree eversion of the feet. Her feet were extremely flexible; in the standing position, the arches were lost; in walking, the student toed out and rolled her weight toward the inner borders; the knees were hyper-extended and the pelvis tilted forward. Upon further examination and closer association with the student it was found that though of stocky build she was unusually flexible in all regions. Her strength scores were low and she found it difficult to maintain improved positions. She was somewhat overweight and her musculature was soft and flabby. During the course attention was directed toward the reduction of weight by means of diet, the improvement of muscular strength through regular and vigorous exercise, and the development of neuromuscular control by conscious alignment of the body segments. Swimming was recommended as a recreational activity which should result in symmetrical development of the musculature. (An orthopaedic surgeon suggested the possibility of glycine dosage in the treatment of this case.) The student was also advised that she should continue regular exercise for the strengthening of her feet and that she should encourage development of the plantar reflexes for maintaining muscular tone by tightening the foot muscles and maintaining a slightly cupped position of the feet in walking and standing.

2. A student was referred to the corrective class with a diagnosis of dorso-lumbar round back. The condition yielded to corrective exercise but the instructor observed that the student was unable to maintain the corrected position except with excessive muscular tension; it was also observed that hypertension was present to a marked degree during all exercises but noticeably absent in social dancing. The student was advised to continue her program of corrective exercise and the practice of conscious relaxation; folk dancing and social dancing were suggested as recreational activities which might help her posture and decrease hypertension in movement.

3. A student was advised into a corrective class because of a contracted chest. She was very much underweight, moderately erect in carriage and tremendously restricted in movement at almost all

joints. Her pulse rate was disproportionately increased following slight exercise. Her musculature was very slight, and she gave a history of excessive mental effort with a definite lack of experience in games and active recreational pursuits. A senior in college, she was five feet and two inches in height, and weighed 72 pounds. Following an exercise program progressive in intensity and duration, the heart rate decreased with moderate activity, weight was increased by 1½ pounds, the girth of the arms and legs was increased slightly and definite attainment was recorded in range of motion and strength. The student was advised into a survey course in rhythmics in which she would encounter low levels of skill but would gain social contacts; she was also advised to enroll in the beginners' class in archery or golf; it was believed that either of these activities would offer participation within the limits of endurance and would insure moderate outdoor activity in a socialized environment; one of these might provide appeal as a means for future recreation and bodily development.

Hazards are presented by certain physical education activities either because of the nature of the activity or because of a peculiarity or limitation of the individual participating. These hazards must be considered in both the corrective and recreational programs.

1. Sports like basketball, hockey, and football which involves many quick stops and turns are particularly dangerous for knees and ankles. Strength and flexibility of the arches of the feet and of the ankles are protective. A well balanced stance with easy rather than hyperextended knees renders the player more effective and the knees less prone to injury.

2. Jumping and leaping upon a hardwood floor is punishing to the feet at best but is likely to be insulting when barefooted. In barefoot dancing the strength of the feet should be built up and the technique of landing should be practiced before height is attained. The hyperextension of the lumbar spine commonly practiced by dancers may prove dangerous to the lumbo-sacral juncture unless sufficient abdominal strength is gained to assure adequate control.

3. Injury to the lower back is likely to occur in diving due to overthrow of the legs and hips and failure of the abdominals and hip flexors to check this overthrow at a point of balance. When the individual has limited extension in the dorsal region there is a tendency to excessive hyperextension in the lumbar region and frequently with disastrous results; if there is extreme flexibility backward in the lumbar spine associated with weak abdominal musculature spring board diving is too dangerous to be considered.

4. Although tumbling and rolling activities excel in the development of agility they present a menace to the individual whose spine is stiff. This stiffness may have resulted from the buttressment of a scoliotic spine; the rigidity so developed is protective and should not be disturbed except by orthopaedic prescription. Often a stiff spine results from limited activity and consequent shortening of ligaments and tendons. In this case remedial treatment should be started. Meanwhile, such exercises as diving (on mats), and even forward and backward rolls should be avoided; such activities call for a smoothly rounded back—when this cannot be achieved, an angular flexion will occur in the upper thoracic spine; too much weight imposed here may result in severe strain and possibly in sprain or fracture in the spinal column.

In Summary:

1. The skill and pleasure of a student in a physical education activity may be improved through corrective exercises and improved body mechanics.

2. A student who has made some improvement through a corrective class should be advised and supervised in her recreational activities so that further improvement will result.

3. Hazards present in certain activities or resident within the body mechanics of an individual should be recognized and protection set up against them.

4. There must be a constant give and take between the corrective and the recreational programs. Students should be referred from the recreational classes and activities for advice, special exercise prescriptions, class work in correctives, and for orthopaedic diagnosis and prescription when the condition requires the attention of an orthopaedist. Students should be returned from corrective classes to classes of the recreational program in which both the nature of the activity and the efforts of the teacher will be factors in the further correction of existing defects.

5. The integration of the two programs can be accomplished only when there is sympathy and understanding among the members of the teaching staff. For clarity of organization the member of the staff best fitted by training, interest, and experience should be designated as head of the corrective program. He should be in charge of corrective classes and should have scheduled hours for advisory service. The members of the staff should consult together in the solution of problems, should strive for improved body mechanics within their classes and should refer cases for special help. The corrective specialist should maintain contacts with all the activities in physical education so that he may be familiar with the problems presented; he should maintain supervision over all cases needing corrective care whether or not they are enrolled in his classes.

THE PRESENT QUALITY OF HEALTH EDUCATION

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Three hundred and fifty years have passed since the first book appeared in London setting forth principles of hygiene. One hundred and fifty years have passed since Dr. J. J. Jackson introduced the first course in health instruction at Harvard University, a series of lectures being given during the senior year and required of all students. Today as in no other time in the history of hygiene programs in American schools have those who have been entrusted with the responsibility of imparting health education to the public been faced with the problems confronting them on every side.

One cannot isolate health instruction from the total socio-economic setting of 1940, draw a circle around it and attempt to test it for its quality. The program in all of its entirety must be seen in direct relationship to its total setting. Only then will it have meaning.

Six hundred years ago Roger Bacon wrote a book *How to Preserve the Youth, Strength, and Beauty of the Body and Senses and All the Faculties of Both Body and Mind,* but he anticipated few readers. Bacon was exceedingly pessimistic as to public interest in health and, putting his pessimism into statistical form he figured that no more than one person in three thousand exhibited any interest in hygiene and that, only after they had reached advanced years.

Today there are many groups including members of our own profession who are as skeptical, if not more so, than Roger Bacon was six centuries ago. Others advocate the continuing of health education of the public as one immediate hope of a better world. As to who is to do the educating, there are the usual advocates of leaving it to the government, to civic bodies, to person or persons unnamed. Several refreshing critics think the doctor himself is par excellence the man to educate the public in medical values and that he has been delinquent in not taking on the task long ago.

Teachers as a group, regardless of the educational areas involved, have isolated themselves away from the realities of the world about them; be it health, economics, sociology, vocations and the like, and formulated a set of procedures in a given field for their students to follow without taking into consideration pertinent factors in the surrounding environment. Much of their products are of the cold storage variety, dead at both ends. We, as a group, have been smug with our intellectual arrogance, but this has not aided in the solution of the problems of the community, the state, and the nation.

It is shocking but enlightening to observe the evaluations of other professional groups of our attempts to meet the basic health needs of the students who daily come to our classes, listen to lifeless discourses on the several topics chosen in hygiene, and then wander off into the community after graduation without being fortified with the basic understandings and principles and essentials in health.

We see, in spite of considerable popular education, a large dependence upon patent medicine, magic and healers of various kinds, and it cannot be said that all such dependence is based upon slender financial resources. In 1929, $715,000,000 were spent for drugs. It is of interest to note that less than one-third of the drugs and medicines consumed annually is used on the express order of physicians.

The era of working in isolation, of attempting to travel the road of progress alone, of solving social problems, is past. We are living in an interdependent form of society where each of us, regardless of our status, is dependent one upon the other. Schools cannot contribute their share to the total program of healthy living unless they begin to work together with other agencies in the community.

Not until the United States Interdepartmental Social Hygiene Board and the American Social Hygiene Association stimulated thinking and interest in health instruction was any large all inclusive study done to determine the status of the health programs in the United States. In 1922 the President's Committee of Fifty on College Hygiene was organized and Dr. Storey, the secretary, sent out inquiries to six hundred and forty-six institutions—colleges, universities, teachers' colleges, normal schools, medical schools and the like. Of the colleges and universities furnishing information, 57% reported a required course in hygiene, 69% of the teachers' colleges and 70% of the normal schools. Dr. Storey concludes that "the college education of the lay citizen in the making is deficient and defective in its informational hygiene methods and content. In general, the student is not supplied with adequate scientific information nor with a type of instruction that will help him as a lay citizen in the formation of intelligent discriminating judgments for the solution of his problems of personal, family or public health." This study was begun in 1923 and completed in 1926.

Ten years passed and Dr. J. F. Rogers, Consultant in Hygiene in the United States Office of Education, decided to evaluate the health work of institutions of higher learning in the United States. In 1936 he sent out questionnaires to 1,662 institutions—colleges, universities, teachers' colleges, normal schools and junior colleges. Sixty-five per cent of the institutions sent back returns. The data is too massive to include in a short over-view such as this, but there are certain important points which are worth mentioning.

1. Only 50% of the colleges report a course in personal or community hygiene.
2. In 22% this course is required of all students seeking a degree in liberal arts.
3. The time devoted to hygiene in the colleges and universities varies from 6 to 144 hours. One institution reports a course of six lectures; one of one-quarter semester hours, etc.
4. Of the colleges and universities offering courses, there is no set time for presenting the courses—one hundred offer the course in hygiene in the freshman year; 16 in the freshman and sophomore years; 3 in the senior years, etc.
5. There is no uniformity or standardization in the subject matter considered—bacteriology and communicable disease, 85%; reproduction and development, 80%; sex hygiene, 80%; mental hygiene, 80%; community hygiene, 70%; anatomy and physiology, 70%; first aid, 60%; home hygiene, 55%; comparative hygiene, 20%.
6. As to the professional training of the personnel teaching the courses there is again a wide range—medicine, 45; physical education, 33; biology and zoology, 19; hygiene and public health, 12; health and physical education, 8; nursing, 3; physical education and hygiene, 3; health education, 3; anatomy and physiology, 2; chemistry, 2; bacteriology and child development, 1; health and recreation, 1; athletics, 1; speech and dramatics, 1; speech, 1; military training, 1.
7. The highest academic rank obtained by the instructors—45, M.D.; 4 Dr.P.H.; 4 Ph.D.; 15 D.Sc.; 3 M.P.H.; 1 M.S.; 8 M.A.; 23 C.P.H. 1; M.Ed. 2; 4 B.P.E.; 4 B.S.; 12 B.A.; 5 R.N.; 1 diploma in physical education; 1 army officer.
8. Method of Instruction—Both textbooks and recitation and lectures were used. Fifty-nine institutions used laboratory or other demonstrations; 113 used written exercises; 48 used sanitary surveys and reports; 35% used printed or mimeographed outlines of lessons.
9. Equipment—65% have a skeleton; 60% casts and models; 80% charts; 40% physiological apparatus; 45% use microscopes and slides; and 25% use motion pictures. About one-half of those who responded considered their outfit for demonstration adequate.

Of the 159 state teachers' colleges, 105 responded and all of the 105 offer a course in hygiene; and in 90 colleges a course was required.

The highest academic rank obtained by the instructors was as follows, in the state teachers' colleges—16, M.D.; 14, Ph.D.; 29, M.A.; 6 M.S.; 9, B.S.; 3 B.A.; 2 R.N.; 1 mechanical engineer.

Of the 285 junior colleges responding, about 50% reported having a course in hygiene.

Other studies have been made of the status of health instruction in the California Junior Colleges. Dr. Charles E. Shepard of Stanford University examined 12 representative junior colleges in 1939. He found that all the colleges visited were offering one or more courses in hygiene. In the majority of instances these courses were being given in the physical education department. The content of the courses varied considerably. Most of the teaching was done from syllabi. Almost one-half of those teaching hygiene felt that hygiene should be taught by someone especially trained in this subject.

In a statewide junior college study of the present status of hygiene instruction in California, including 43 public junior colleges, the following conditions were found:

1. With the exception of four institutions, all of the junior colleges offered a course in personal hygiene, while only 5% offered further courses in health instruction.
2. Of the hygiene courses which are offered, there is little agreement among those teaching the subject; as to who should teach the subject, as to the subject matter content to be taught; as to the relative importance of the subject units to be included and considered, as to the amount of time to be devoted to each specific unit, as to the methods and techniques to be employed in the presentation of these units.
3. Of the instructors teaching hygiene, 50% of the instruction is being given by physical educators, while the remainder is distributed among the personnel of twelve other not too closely allied departments, each not knowing, in many cases, what the other is doing.
4. Of the fifty per cent of the physical educators teaching hygiene, 25% would rather be teaching physical education activities, 15% hygiene alone, 10% in both fields, while the remainder would prefer teaching in other areas.
5. There is a wide confusion existing in the institutions as to what department is responsible for the administration, organization and teaching of health education.

6. There is a wide practice on the part of junior college administrators, regardless of educational preparation, training, experience, personality and interests, of drafting whomever might be willing to attempt to teach hygiene, as demonstrated by the fact that teachers of English, history, art, chemistry, commerce, orientation, and the like are given an opportunity to instruct students.
7. There is need for better selection, evaluation and organization of instructional content. Time which could be used to advantage in teaching essentials is too often wasted on the teaching of nonessentials.
8. The average teacher of hygiene has had six years of high school teaching experience, has graduated from college with a B.A. degree, holds the General Secondary Credential, has majored in physical education, is divided as to subject teaching choice, teaches a compulsory two-unit course, is confused in the selection of the subject matter to be taught, uses the lecture-section meeting scheme and an outside speaker in the presentation of the subject matter, uses a textbook which is not standardized as to title, author or content, does not use films, syllabi, demonstrations or field trips, teaches physical education and coaches when he is not teaching hygiene.

In summarizing as to the present quality of classroom instruction in hygiene, the following points in terms of inadequacies or lacks can be listed:

1. Lack of interest in many cases on the part of both administrators and teachers in hygiene instruction.
2. Lack of coordination among the several departments in the schools which contribute to the health instruction program in order to present a unified front and attack of health problems.
3. Lack of coordination between the hygiene teaching forces in the schools and the community resources.
4. Lack of well-defined objectives and aims on the part of the teachers upon which a sound hygiene instruction program might be based.
5. Lack of flexibility of the hygiene instruction program to meet the needs of a constantly changing and emerging society.
6. Lack of evaluation of subject matter content appropriate to personal and community health needs.
7. Lack of a fundamental and basic philosophy underlying the selection, presentation and evaluation of health content.
8. Lack of preparation of many teachers charged with the responsibility of administering, organizing, and teaching in the total health program.

OUR BOYS AIN'T GOT RHYTHM!

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This article is inspired through the observation of physical education major students over a period of ten years. Year after year boys come to us from the high schools with a total lack of elementary rhythmical training in physical skills. If these boys that come to us who are especially interested in physical education, due to a desire to make of it a life work, are not properly prepared, how much weaker in a rhythmical sense are the remainder of the boys in our high school physical education programs?

Tom Harmon in a recent Saturday Evening Post article (October 25, 1941) stated the following: "I believe that a good dancer can handle himself a lot better in the open field than the boy who has not a *natural gift* for rhythm." It is my conviction, however, that every normal human being has a natural gift for rhythm which is often not permitted to function. This apparent lack of rhythmical skill can, I believe, be rectified through a program of rhythmical exercises under a competent instructor. One often hears people say of a young man—"he has no rhythm." This is sheer nonsense since everyone must possess a certain amount of rhythm merely to exist. We know that most of our body functions have a rhythm of their own—involuntarily to be sure—but nevertheless rhythmical. Our boys come to us with an undeveloped rhythmic sense, which can and is developed after a period of instruction; in some extreme cases two to three years. In other words rhythm is present in the boy and only desires to be expressed. We have boys who cannot keep step with a marching group until the last of their freshman year. The reason for this is that the boy attempts to think the rhythm rather than to feel it. The boy is so concerned with making his muscles react that he reacts slowly and consequently is out of step. As soon as his muscles become sufficiently trained to move with very little thought process, he begins to give his undivided attention to the beat in the music and is soon able to keep up with the group rhythmically. Of course the

same procedure has to be repeated when he learns a change step or a closing step or possibly a swing-hop in place. The boy cannot perform the step in tempo until he makes the physical performance of the step automatic. Then through tedious repetition he eventually performs the step in time with his class. I heartily believe that a fundamental sense of rhythm is present in every human being but it cannot be adapted to a group rhythm or to musical accompaniment unless there is sufficient practice in muscular coordinations to make the expression of that rhythm possible. Any human being that is able to walk can be taught to dance and can be taught to keep time to a piano or to an orchestra. Naturally it is obvious that the person teaching the rhythm, and rhythm can be taught, must himself be sufficiently secure in rhythmical coordinations.

The majority of our people do not lack a sense of rhythm, rather do they lack a sense of physical rhythmical expression. Their physical skill is not developed sufficiently for them to express a rhythm. They hear a fox-trot tempo, but by the time the body is urged to participate in the rhythm it is too late, and we have a ballroom dancer behind the beat, or the man in the parade out of step. There is a fundamental need for rhythmical expression which it is evident we do not satisfy. This becomes very apparent if we will only take the trouble to examine the couples on any dance floor. Those who are rhythmically attuned are few and far between. People are dancing but they do not dance in tempo. This is due to the attempt to think the rhythm rather than to feel it. There is insufficient time to say to oneself now I must step forward for this beat of the music, and now I must pivot or dip. The step, pivot or dip must be automatic so that the dancer can give undivided attention to the music. One cannot give undivided attention to music unless one is relieved of the strain of thinking out the form of physical expression. The person who feels the music will then be in the position of the good dancer who gets out of hearing range of the orchestra and suddenly returns to it, to find that he is still dancing in tempo.

It is my contention to a large extent that the inherent rhythmical sense of our people is allowed to atrophy during the physical education course merely because it is not used sufficiently. Our young children are all rhythmical until they are sent to school to become unrhythmical.

Too often we get the excuse that there is not sufficient room for rhythmical training due to lack of facilities. Fundamental dance steps can be taught anyplace where people have room to walk. Dancing can be taught in the classroom by using the space in the aisles, provided a history or other lesson isn't scheduled on the floor beneath. Dancing can be taught to large classes if attention is given to fundamentals only.

It is not necessary to have musical accompaniment, although much better results will be obtained if a victrola is used, and a decided improvement will be noted if a good pianist can accompany the class. I recall an old Turn Verein teacher who taught dancing, by alternately tapping a wand on the floor, snapping his fingers and occasionally whistling. I have used a primitive drum and a tambourine, and occasionally have attempted a radio, although this is difficult, as pot luck must be taken and the steps must be composed on the spur of the moment, for the musical accompaniment may vary from a swing quartet to a military band, but it can be done.

For those who are rhythmically inclined, it is sacrilege to be out of time. Our present world troubles may be traceable to a lack of rhythmical expression. The success of the German Army up to the present may be a manifestation of this principle of rhythm. Everything is accomplished with a clocklike precision and the allies do not seem to stop that rhythmical progression until they themselves get into tempo. Our production and our manpower, our administration and our labor too, must get into the swing of things. The world is moving along in jitterbug and boogie woogie tempo, and the United States has yet to establish its march tempo. Leaders tell us a concerted effort must be made meaning, merely an adaptation of rhythm. Our labor is jumping into the air on the downbeat, just as my rhythmical morons among the freshman men are jumping into the air when they should be hitting the ground. With some attention to rhythmical principles we may meet this dictatorship menace on an even basis and return to more peaceful ways. We must get leadership in our national affairs, by men who have their fingers on the rhythmical pulse, just as we need rhythmical leadership in education in general and in physical education in particular. Music soothes the savage breast, but it must be physically expressed even if it is only the feet which go tap tap on the back of your theater seat. Perhaps music sets up a store of energy which must be expressed in some fashion such as we are told is Hitler's reaction to Wagnerian Music.

In spite of claims to the contrary, the human being still is, and always will be an animal and needs animal expression. The veneer of civilization is mighty thin and needs reinforcing. Perhaps if our physical educators will spend a little less time on our varsity athletes and a little more time on the more general physical skill of the great majority, we may eventually have the mass trained in group rhythm. Then possibly we may allow the great spirit of American individualism to become adjusted to the world pulse and through concerted rhythmical action and pattern we may be able to wipe out the dictatorship menace and proceed on a smooth, more rhythmically paved road to a better world.

ELEMENTS IN A PUBLIC RELATIONS PROGRAM

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Public relations, as they concern schools and their administration, cover a large field. It is the purpose of this paper to discuss the relationships a football coach might have with the students and with the public.

Every football coach, and every physical education teacher as well, must give considerable thought to these relationships. Too often are coach and teacher so absorbed in their daily routine that they forget they owe the student body and the general public some consideration.

The students and public are given consideration when they learn something about "their" team, its strength, and weaknesses, its chances of winning or losing, and about its individual members.

Regular and accepted means for giving publicity to the athletic events of a school should be followed. The extent of such publicity will depend upon school policy, seating capacity, and interest shown in the event by the students and the public. Paid advertisements in newspapers may be advisable in some instances. Radio "spots" and theatre "flashes" are other advertising media.

The news-releasing agent in a high school should be the coach, the department head or athletic director, or the principal. It should be clearly understood which of the three is to have this responsibility.

Inasmuch as the students should be given first consideration with respect to the athletic program, they should be made as familiar with it as possible. Athletic assemblies offer this opportunity. Such assemblies, held not oftener than twice during a season, arouse interest and provide a means through which the student body may be educated as well as informed on certain aspects of the game or contest. Students then become more intelligent spectators, and the athletic program becomes an educational experience for them as well as for the participants.

Athletic assemblies as indicated have been successfully held by the Senior High School of Dubuque, Iowa. Such an assembly is described:

The analysis of four plays and a demonstration football game were the basis of a star football assembly. The entire student body, eleven hundred strong, was seated in the bleachers. Yell leaders were on hand for the game. A public address system owned by the school was put into use.

Two full teams were used for demonstration purposes. An off-tackle play, a reverse, a punt and a simple forward pass were analyzed. After an explanation, each boy did his part separately in slow motion. Then the whole eleven executed the play together.

The student body soon realizes that there are other players on the team besides the ball carrier and the forward pass receiver. The value of tackles, guards and blocking backs was impressed upon them. In the game that followed, common fouls were explained and then demonstrated by specific individuals.

The students were made acquainted with the personnel of their team and the details of executing four simple plays.[1]

Similar assemblies have also been held in field and track and basketball. The factors to be stressed in such assemblies are thorough planning and that demonstrations be short, simple and well-executed, and clearly described.

A great deal of adult interest in high school athletics is parent-interest generated through a son or daughter on the team or in the school. It becomes apparent then that high school athletic assemblies may also be a means of educating parents and of disseminating information about the team or contest to the public in general.

Some schools have held open clinics for students and adults in various sports. These clinics usually occur before the first game and are interest-arousing as well as instructive.

Knute Rockne, the great football sage, once said: "Every year good coaches lose their positions because they cannot get along with the public."[2] Obviously this is not the only reason some coaches fail to hold their positions. However, the statement is significant enough to merit careful consideration. What can the coach do to establish a better understanding between himself and the public? Are there definite procedures for solving the problem; or is it a situation that is hopeless? It is believed that the problem is serious enough to demand the attention of the coach even during those strenuous days when every minute counts toward the building of a successful football team. Yes! Every coach must take time to cultivate his public.

Some coaches have the knack of getting along with the public; some have outstanding personal-

[1] Dalzell, Wilbur, "Athletic Assemblies," *Scholastic Coach*. September, 1936, p. 27.
[2] Rockne, Knute K., *Coaching*, New York: Devin-Adair Company, 1928, p. 14.

ities; many coaches deliberately set up definite plans for developing and bringing about a mutual understanding between the public and themselves. Those who have some trouble would do well to adopt such a method.

Through the trial and error method several plans have evolved which are bringing the coach and the public into closer accord. One such plan, used more extensively each year, is what is known as the "Sunday Morning Quarterback Club." It is the same by any other name. Such a group is made up chiefly of townspeople who are interested in football. They may even meet at a luncheon on the Monday following a game. The purpose of such a group is to create good will, and to develop a better understanding of football.

"The showing of moving pictures of the game is an immeasurable means of creating interest and understanding. Many instances of inaccurate observations occur in the game of football. Naturally, all spectators will not see the same thing in a game, especially when there are twenty-two men in action at the same time. The movies do record accurately, and the showing of these pictures will eliminate many instances of misunderstanding, and are of great value as an instructional device," says Cassidy.[3]

Since the equipment necessary for taking moving pictures is available in but few high schools other means of depicting the incidents and strategies of the game will of necessity have to be used. To a group of football enthusiasts, chalk talks, game charts, scouting reports, and game reviews are valuable. Incidentally it should be stated, that whatever is presented should receive adequate preparation. Points to be made and events to be stressed should be carefully outlined and an impartial analysis made of them from the point of view of the audience, otherwise the results may not be satisfactory. If such material is well organized and presented in an impersonal manner, it will go a long way toward correcting misunderstandings and establishing more cordial relationships between the public and the coach.

If other means of communication, such as the radio and the newspaper, are at the disposal of the coach, they should by all means be used. Short, well organized talks or interviews over the radio have immeasurable scope and influence. Fortunately, many coaches have sufficient skill and understanding to write interestingly for their "fans" in the newspapers. A column in the school paper, called the "Coaches' Corner" is conducted by the coach of a large high school.

Realizing the problems of sports writers, many coaches make special efforts to cooperate with them at all times. Naturally, if a coach wants the support and friendship of these men, he must appreciate their efforts in his behalf and give full cooperation. In the past some coaches have ridiculed the writers and their reports of games. The majority, however, have made friends with the newspaper men. The results are obvious. Some athletic authorities have gone so far as to suggest that coaches learn to write the story of their games. Williams and Brownell have this to say about the relationship between coach and sportswriter:

"News reporters and photographers should be received with the same cordiality and respect afforded other visitors. They should be assisted to do their work with the greatest possible efficiency. This does not mean that administrators or teachers should fawn upon the reporter in search of news, or attempt to establish a false sense of hospitality. Such a procedure is quickly noticed by the alert journalist whose daily routine brings him in contact with all sorts of people. The reporter is an official representative of the public, and if the public is to be impressed with one's sincerity, the worth of one's program, and the need for community cooperation, the reporter must first be impressed."[4]

An efficient news representative will not be content to write stories about those things which educators believe the public should know. He will demand first-hand information. In the office he obtains ideas relative to administrative policy; in the schools he sees how these policies actually operate. Instead of always entertaining the reporter in the office, one may take him to the gymnasium, athletic field, swimming pool, or health examining room for actual observation of existing conditions.

To summarize: It seems necessary, that schools and coaches not revert to high-pressure methods which invariably are recognized as such but use accepted means of publicity.

Athletic assemblies offer excellent opportunities to acquaint the students—and in turn, the parents—with athletic programs. Even orientation periods at the beginning of each semester will pay dividends.

A coach must try to fit himself into the community in which he is located, and "get along" with the general public. This means that he must understand people, and especially use tact with his "Downtown Quarterbacks."

If a coach will cooperate with the news writers, he will receive more than fair treatment from them. Moreover, the coach should never try to write the news story for them. Let the sports writer do his work, and the coach do the coaching.

[3] Cassidy, Rosalind, *New Directions in Physical Education*, New York: Prentice-Hall, Inc., 1939, p. 47.

[4] Williams, Jesse F., and Brownell, Clifford L., *The Administration of Health and Physical Education*, Philadelphia: W. B. Saunders Company, 1939, p. 552.

A PLAN TO PROVIDE FOR THE GIRL WHO MUST HAVE A TEMPORARY EXCUSE FROM PHYSICAL EDUCATION CLASS

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Teachers of girls' physical education classes know only too well the number and range of excuses that may take a healthy, normal girl out of active work from one to five days each month. The causes for the excuses range from menstrual periods and colds to all types of minor injuries.

I wish to discuss a plan for caring for the girl who is excused, which has been used for ten years in a suburban township high school. In this school there are about 1,800 girls enrolled who take physical education five days a week for four years. There are eight women teachers in the department of physical education. Every girl is given a medical and physical examination each fall. On the basis of this examination the physical education program is arranged. The girl who is able to do all work may be placed in one of the following classes: swimming, rhythm, posture, team sports, or individual sports. If her examination shows that she should be restricted, her individual needs are met with lighter activity, and for a very few girls a rest period takes the place of active gymnasium. These classes meet five times a week for eight weeks. Showers are required after each class.

If excused girls sit on the sidelines or in a balcony, they can easily become a disturbing influence for the entire class and learn relatively little of the class work. When they are asked to dress and do part of the class work, there is an opportunity for the lazy girl to do too little for many days and for the eager girl to overwork. Girls at this age are not sufficiently mature to judge wisely.

Ideally the time during which the girl is excused should be spent constructively. We looked over the health materials taught in our school and found many included in home economics and science courses. Sometimes outside reading in the field of health could be selected in English. All pupils do not take all of these subjects, and all desirable health knowledge was not presented in these fields. The department of physical education, which reaches all girls, needed to make a contribution to health teaching beyond that which is a concomitant part of all physical education activity.

Rather than have one day a week or one semester in four years for health teaching, we decided to require each girl to attend a health class for at least three days each four weeks. Here she works upon a required unit in health-knowledge materials. We ask that she attend the class the first three school days of her menstrual period. If she is in a swimming class she stays until her period is ended. If she has other reasons for being excused from her activity class she reports to the same health class, where she works upon some problem related to her needs. For instance, if her excuse is from swimming because of a sunburn, she may have greater need to study the relationship of sunshine to health, and the cause, prevention, and treatment of sunburn, than to observe a swimming class.

Each period of the day there are four scheduled physical education classes and a health class. The excused girls from the four classes meet in the health class room. The attendance will range from thirty to sixty pupils. Freshmen and sophomores use a Workbook in Health for High School Girls. The units of work are listed below.

Freshman Year:

Taking an Inventory.
Banishing Coughs and Sneezes.
Checking Up on Your Luncheon Habits.
Considering the Value of a Breakfast.
Investigating the Bathing Habit.
Keeping a Clean Food Tube.
Guarding against Ringworm and Warts.
Making Posture an Asset to Personality.
Knowing How High School Girls Should Care for Their Teeth.
Planning the Summer Vacation.

Sophomore Year:

Looking at Yourself Objectively.
Reconsidering the Cold Problem.
Planning for a Comfortable Menstrual Period.
Understanding the Value of Well-Chosen Food.
Finding Out the Real Value of Sleep.
Understanding the Importance of Safeguarding Eyes and Ears.
Thinking Over the Clothes Problem.
Competing with the Beauty Shop.
Looking at Feet and the Shoes They Wear.
Appreciating the Hygiene of Our Surrondings.
Finding Out the Truth about Advertised Medicines.

The juniors and seniors read assigned work upon simple problems in mental hygiene and the busi-

ness of growing up. They keep a notebook in which they place reading outlines and written discussions of special problems. Florence G. Martin, who is the head of the department of physical education for girls, has planned the junior and senior units of work.

Each girl keeps a date chart of her period and a health habit chart, which is checked when she is in health class. This serves only as a reminder to her of the habits that are advisable for her to follow. She is never graded upon this chart.

Girls working on the same unit are seated together in the health class room. The teacher helps individuals or small groups. She gives assignments, helps pupils find reference material, and provokes their thinking along desired lines. Each physical education teacher has one health class as a part of her teaching load. This helps each teacher to be more aware of significant situations which yield health implications for her other physical education teaching. The girl also associates the importance of health with the importance of skills taught in other physical education classes, when she knows that the same teachers are concerned with both. The health class room has a small library of text books, pamphlets, and posters upon health for the secondary level. There are lockers in which workbooks and notebooks are filed alphabetically.

Girls are interested in the problems related to their health. This is evidenced by their after-school discussions with their teachers, the articles which they bring from outside sources, and the many mothers who tell us they approve of our approach to the health habits which they have been trying to teach.

We know that we can not be sure of changing health-habits. We can only hope to add to the health-knowledge and change the attitudes toward health practices. We do not believe that we are training girls to be over-cautious of their health during a period on which there has been very little research, but since some time in the physical education program should be used for health teaching, we have decided to let it fall upon the days when the girl can not work to full capacity in activity classes.

SUGGESTIONS FOR DEVELOPING PHYSICAL FITNESS

Summarized by
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The 1941 High School Conference, at the University of Illinois, devoted major attention to the problem of "How to Develop Physical Fitness in the High School Youth." Prominent speakers gave their views on this problem, now a timely one in the general program of National Defense. Some of the outstanding speakers included: Dr. S. C. Staley, Dr. N. P. Neilson, Commander E. J. Stein, Dr. L. W. Irwin, Dr. Howard Beard, Mr. Don C. Seaton, Dr. A. J. Stoddard, Dr. G. B. Watson, Mr. A. H. Pritzlaff, Mr. Frank McCormick and Miss Dora Sharp. The writer spoke before the YMCA Physical Directors of the Illinois Associations on this same problem. In general, there is agreement that the present organization and administration of the Health, Physical Education and Recreation program does *not* meet the current need for developing Physical Fitness due to limitations of methods, time, staff, curricula, and objectives as they are now practiced. Since it would be desirable to put more time on Physical Fitness, to emphasize this phase of the work in the present crisis, the following suggestions may be thought provoking:

A. General Organization and Administration

1. The National Emergency for Defense demands organization of all material and human resources. President Roosevelt, Mayor LaGuardia, John B. Kelly, Alice Marble and numerous other leaders, committees, and organizations are moving forward with a National Campaign for Physical Fitness. Aside from the great need for more rugged youth in the army, navy, and marine corps, the problem of Civilian Morale and Fitness is paramount. The problem needs to be recognized as No. 1—a *man power problem.*
2. The President of the United States, Executives of Social and Welfare Agencies, Superintendents of Instruction in the State Department of Education, all city

* A summary of the suggestions developed by various speakers in the University of Illinois, High School Conference, Urbana, Illinois, Nov. 6, 7, 8, 1941.

Superintendents and Principals should proclaim this needed emphasis on Physical Fitness.

3. Responsibility should be assumed by Executives, the School Board, by Superintendents and Principals to organize committees and to make the necessary administrative changes in staff, facilities, curriculum, and in time apportionment.
4. Organizational plans for Physical Fitness need to be developed in every city, every school and every recreational agency. Each city and each school or agency needs a committee which will produce a collaboration of professional and lay personnel to do the job.
5. The work of the various agencies involved in programs of Physical Fitness should be investigated and cooperative relations established: The American Legion, the American Red Cross, the Y. M. C. A.'s, the Boy Scouts, the Girl Scouts, etc.
6. The programs in Health, Physical Education and Recreation should be expanded to a foremost position and emphasis with more time allotted under competent leadership. The required Physical Education and Health Education, the Extra-Curricula Sports, the Outdoor Recreations—all need expansion. Fundamental emphasis on these phases in relation to the whole educational and recreational program is the note. 100% participation should be required; programs should be offered to all, including the handicapped; five days per week, two hours per day per student.

B. Special Methodology to Develop Physical Fitness

1. Special *Physical Fitness Clinics* need to be developed by expert leaders. These demonstration centers will develop experimental programs and methods.
2. Rigid *Medical Examinations* and remedial programs should be offered. Each person should be examined and followed up at least once each year.
3. Voluntary *Physical Fitness Clubs* should be established for all who desire to attend. Workouts should be daily and varied to emphasize outdoor hiking, camping, skating, marching, cross-country runs, weight lifting, running, swimming, life saving, climbing, tumbling, falling, dodging, throwing, and jumping. Conditioning exercises should be included which emphasize the dynamic aspects of Physical Fitness.
4. Comprehensive *Tests of Physical Fitness* should be administered to each person once each semester. These will emphasize the dynamic aspects of Physical Fitness, including: Balance, Flexibility, Agility, Strength, Power and Endurance. The results should be carefully preserved and performance scales constructed therefrom.
5. Individual *Guidance Folders* will be established for all who are below average in Physical Efficiency, using comprehensive inventory tests of the dynamic aspects of Physical Fitness.
6. Unusual publicity should be attached to all of the new work. Posters and exhibits should be organized for display.
7. The activities included in Physical Education should be reviewed with emphasis placed on those which develop strength, power, and endurance. Combat and defensive activities need to be stressed. Team games of a competitive nature may be emphasized.
8. Motivational methods need especial emphasis; objective rating scales of physical fitness achievements, part of the grade on Physical Fitness, competitions in Physical Fitness Tests, pictures of physiques, bulletins, visual material, movies, etc.
9. People need to be grouped for instruction on the basis of a sectioning test which will divide them into superior, good, average, poor, very deficient groups according to the Physical Fitness Rating. Developmental and conditioning work should be adapted to these groups on a graduated plan.
10. *Literature* on Physical Fitness needs to be recruited and demonstrated to members. Themes may be required in various courses recommending the more recent books and articles on Physical Fitness as resource material. Bibliography lists should be organized on popular readings in Physical Fitness and classified aspects, such as: diet, feet, strength, flexibility, endurance, etc.

MY KINGDOM FOR A TEXT OR PRACTICES IN THERAPEUTICS IN COLLEGES LAST YEAR

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"Adapt your class work to the needs of the individuals and the circumstances where the work is given" may be a good adage in many cases, but so far, in therapeutics classes, it has proven a poor one to follow. Unless a girl is going to be a trained physiotherapist, the therapeutics part of her major physical education training has to be rather brief and should be to the point. To meet general requirements for certification and graduation she does not have an opportunity in most undergraduate courses, to devote a great deal of time to the pursuit or practice of any one phase of physical education. However, she does need books that will help her in college, and when she starts as an inexperienced teacher—books upon which she can pin her faith and build her work.

At present the field of Therapeutics is so diversified and there are so few even partially complete texts, that the confused embryo teacher has little to which she can tie. Naturally, her college course should help her and does, but when she gets out teaching with a hundred and two details to attend to, it is hard to remember whether she decided in college that posture was static or fluid, whether simple curves should be treated with symmetrical or asymmetrical exercises and about feet—well—. And in the average small town library it is hard to find even the word "therapeutics" in the dictionary. Of course, there are the notes on her assigned readings and the class discussions, but these are often vague; and the memory of her observations and practice teaching in a well equipped hospital or training school is of little help. There is a great need for a simple text in Therapeutics, scientifically accurate, with just enough of anatomy to recall the college course, and suggested exercises which require little or no apparatus. With such a text as a reference, more corrective work would be done in the high schools and elementary schools of the country. This text should be supplemented with other readings to give breadth of training, of course.

Because of the wide spread dissatisfaction with existing texts used in college courses in Therapeutics, a survey was made last winter among the colleges granting major work to women in Physical Education. Questionnaires were sent to sixty representative departments of Physical Education in colleges all over the United States. Replies were received from teachers in forty-four colleges. Quite a few said they were not satisfied with the texts they had been using and were not able to find anything suited to their particular needs. Twenty-five of the forty-four schools used a text, although they often did not like the text they had adopted, and all of them used supplementary reading material.

TABLE I. BOOKS USED AS TEXTS AND AS SUPPLEMENTARY READING IN FORTY-FOUR COLLEGES AND UNIVERSITIES

Author	Name of Book	Used as Textbook	Used for Supplementary Reading
Rathbone	*Corrective Physical Education*	12	17
Lowman, Colestock and Cooper	*Corrective Physical Education for Groups*	4	13
Bohm and Painter	*Massage: Its Principles and Technique*	2	2
Drew	*Individual Gymnastics*	2	11
Stafford	*Preventive and Corrective Physical Education*	2	13
Chenoweth and Selkirk	*School Health Problems*	1	0
Franz	*Nervous and Mental Re-education*	1	0
Hawley	*Kinesiology of Corrective Exercises*	1	10
Howland	*Teaching of Body Mechanics*	1	6
Jacobson	*Relaxation*	1	0
Lovett	*Treatment of Infantile Paralysis*	1	2
Merrill and Legg	*Physical Therapy in Infantile Paralysis*	1	0
Morton	*The Human Foot*	1	0
Mulliner	*Mechano-Therapy*	1	2
Phelps and Kiphuth	*Diagnosis and Treatment of Postural Defects*	1	5
Stafford, Decook, Picard	*Individual Exercises*	1	5
Stewart, H. E.	*Physiotherapy*	1	0
Lovett	*Lateral Curvature and Round Shoulders*	0	6
Todd	*Thinking Body*	0	6
Morton	*Oh! Doctor, My Feet*	0	5
Stafford	*Sports for the Handicapped*	0	5
Lane	*Your Carriage Madam*	0	5
Glassow	*Fundamentals in Physical Education*	0	4
Phi Delta Pi	*Symposium of Posture*	0	4
McMillan	*Massage and Therapeutic Exercise*	0	4
Nye	*New Bodies for Old*	0	4
Lippett	*Manual of Corrective Gymnastics*	0	4
McKenzie	*Exercise in Education and Medicine*	0	3
Whitman	*Orthopedic Surgery*	0	3
Jones and Lovett	*Orthopedic Surgery*	0	3
A. M. A.	*Handbook of Physical Therapy*	0	3
Lowman	*Technique of Underwater Gymnastics*	0	3
Davis	*Principles and Practice of Recreational Therapy for the Mentally Ill*	0	3
Thomas and Goldthwait	*Body Mechanics*	0	3
Kleinberg	*Infantile Paralysis*	0	2
Bowen and McKenzie	*Applied Anatomy and Kinesiology*	0	2
Morrison and Chenoweth	*Normal and Elementary Physical Diagnosis*	0	2
Wright	*Muscle Function*	0	2
Mensendiech	*Mensendiech System of Functional Exercises*	0	2
Steindler	*Mechanics and Normal and Pathological Locomotion*	0	2
Thorndyke	*Athletic Injuries*	0	2
Sever	*Principles of Orthopedic Surgery for Nurses*	0	2
Mennell	*Physical Treatment and Massage*	0	2
Bennett	*School Posture and Seating*	0	2
Lewin	*Textbook of Orthopedic Surgery for Nurses*	0	2
Morton	*The Human Foot*	0	2

ROGERS AND THOMAS—*New Pathways to Cerebral Palsy*	0	2
COPESTAKE—*Theory and Practice of Massage*	0	2
HISS—*New Feet for Old*	0	2
JACOBSON—*You Must Relax*	0	2

One teacher mentioned the accumulation of personal folders of material which were placed in the library to be used as references. Another person is getting out a great deal of mimeographed material which he hopes to publish soon. A third person states that she "formulated a course without a text."

TABLE II. PERIODICALS USED AS SUPPLEMENTARY READING IN THERAPEUTIC COURSES OF FORTY-FOUR COLLEGES AND UNIVERSITIES.

Name of Publication	Times Mentioned
Journal of Health and Physical Education	9
Physiotherapy Review	9
Hygeia	5
Medical Journal	3
Archives of Physical Therapy	2
Journal of Bone and Joint Surgery	1

Opportunities for observation and practical work vary all the way from the four hundred hours required in recognized schools of Physiotherapy to the college reporting no opportunities at all. One school said that their girls spent a half day each week for one semester working in a hospital. Another spent sixteen hours assisting in corrective classes and sixteen hours helping in a hospital. Quite a number of schools mentioned two hours per week for one semester as the average time spent.

Almost all schools gave their majors an opportunity to help with weighing, measuring and observing or participating in the regular college physical examinations. Some schools used the therapeutics class itself as "guinea pigs" for examinations and the prescription of exercises. Others practiced on the corrective or restricted classes in the college. One school assigns two or three pupils to each major for special exercises during the year. Practice and observation in the training schools at both the elementary and high school levels were often mentioned. Posture tests and posture exercises are often a part of the regular practice teaching. One school runs a special posture clinic for children on Saturday. Another one has special posture and foot clinics at announced times. Sprains and fractures at the massage stage are turned over to Physical Education majors in one school. Where colleges are near large cities or have adequate hospital facilities, classes are taken to Crippled Children's Clinics, special Orthopedic hospitals, to city and county clinics and to other hospitals for both observation and practical work under a trained physiotherapist. One city system has corrective centers for public school pupils, and here the therapeutic students may observe and practice under supervision.

Classes where the exercises are given are called corrective, individual, restricted, body mechanics and special, all of which have a rather undesirable connotation, but nobody seems to have a better name for them. The term "therapeutics" is also questioned. One correspondent says, "Since 'Therapeutics' is a term with rather distinct medical meaning, it seems better to me for the students, as well as to create a more a more just impression of our work among physicians, to use a term applying to educational procedures rather than one implying medical knowledge and authority."

ACHIEVEMENT SCALES IN STRENGTH TESTS FOR SECONDARY SCHOOL BOYS AND COLLEGE MEN

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PART II

ACHIEVEMENT SCALES IN STRENGTH TESTS FOR COLLEGE MEN

Scales for secondary school boys were published in *The Physical Educator*, Volume II, No. 3, February, 1942. Uses for the scales for college men are similar to those for secondary school boys, namely:

1. Norms in strength performance for *survey* purposes
2. Standards to *motivate* development in strength
3. A *partial measure* for final marks in physical education
4. *Guidance* for *prospective* teachers in physical education
5. A *partial measure* of program *effectiveness*

Adequacy of Sampling

The data for the college strength scales were obtained from: 1, University of Illinois; 2, Indiana University; 3, Kemper Military School; 4, Notre Dame University, and 4, Williams College, whose populations are derived from many scattered states. Under Cozens' Height-Weight Classification groups

there are no fewer than 533 cases for any one test (Physical Capacity Index) and for two tests (Rogers' Strength Index and Larson's Springfield) over 3,100 cases were obtained. Under McCloy's Classification Index groupings no fewer than 425 cases were used in any tests (MacCurdy's tests) and as many as 3,067 cases were given Rogers' Strength Index. The data for groups on the extremes are admittedly unreliable in number but in those classifications students are rare and in the case of MacCurdy's tests the data were not as available as for other measures. Actual frequencies for all tests in all groupings are given in Tables I and II, below.

Cozens' Height-Weight Classification group names are symbolized for convenience. In Table I and in the Achievement Scales the symbols are as follows: S. S. (Short Slender), S. M. (Short Medium), S. H. (Short Heavy), M. S. (Medium Slender), M. M. (Medium Medium), M. H. (Medium Heavy), T. S. (Tall Slender), T. M. (Tall Medium), and T. H. (Tall Heavy).

TABLE I. COLLEGE DATA IN COZEN'S HEIGHT-WEIGHT CLASSIFICATION GROUPS

	Groups									
Tests	SS	SM	SH	MS	MM	MH	TS	TM	TH	Totals
Force Index	13	27	34	35	93	125	19	59	129	534
Larson Springfield	34	177	221	132	752	850	58	393	531	3148
Physical Capacity Index..	13	27	33	35	92	125	20	59	129	533
Physical Fitness Index...	45	160	176	208	745	819	117	343	475	3088
Strength Index	45	188	176	209	745	821	103	344	476	3107

McCloy's Classification Index I (20 Age + 6 Height + Weight) is employed for determining the classes in Table II. Should the department customarily employ Classification Index II (6 Height + Weight) the intervals in Table II can be converted thereto by subtracting 340 from the indicated limits.

TABLE II. COLLEGE DATA IN McCLOY'S CLASSIFICATION INDEX GROUPS

	Groups							
Tests	Up to 874	875-899	900-924	925-949	950-974	975-999	1000 Up	Totals
Force Index	65	76	123	83	52	26	..	425
Larson Springfield	366	798	954	571	176	80	..	2945
Physical Capacity Index.	65	76	123	83	52	26	..	425
Physical Fitness Index..	429	746	968	541	223	75	30	3022
Strength Index	407	833	961	531	227	78	30	3067

Standards for Performance

When the local data approximately agree with these general norms the two bases given below may be employed to mark or indicate standards for the several tests herein described, on the basis of the scale score earned.

Two Bases for Assigning Marks for Points Earned in Modified T-Score (6σ) Achievement Scales*

Point Ranges	% of Cases	Mark	Point Ranges	% of Cases
81-100	3.5	A or Superior	76-100	7
61- 80	24	B or Good	59- 75	24
41- 60	45	C or Average	42- 58	38
21- 40	24	D or Poor	25- 41	24
0- 20	3.5	F or Inferior	0- 24	7

Specific References

To many workers in the field the five strength tests and the classifying measures employed in this study are quite familiar. Some who may wish to utilize the strength scales may not be so well acquainted with these particular strength tests and classification measures. The latter group of workers are referred to the annotated references in Part I (Classification Index—*Measuring Athletic Power* by C. H. McCloy; Force Index and Physical Capacity Index—*A Test for Measuring the Physical Capacity of Secondary School Boys* by H. L. MacCurdy; Larson Springfield—"A Factor and Validity Analysis of Strength Variables and Tests With a Test Combination of Chinning, Dipping, and Vertical Jump" by L. A. Larson; and Physical Fitness Index and Strength Index—*Physical Capacity Tests* by F. R. Rogers) and to the following source for information regarding Cozen's Height-Weight Classification: Cozens, F. W., *Achievement Scales in Physical Education Activities for College Men.* Lea and Febiger, Philadelphia, 1936. Pp. 7-12.

Among college men, chronological age has been shown repeatedly to contribute little to physical achievement. These Height-Weight Class Divisions provide a homogeneous grouping which excludes the superfluous factor of age. (At institutions employing the Cozens' Achievement Scales for College Men, it is recommended that these same class divisions be employed for the strength tests of this study.)

* That basis should be employed which allots marks in the proportions most closely approximating those recommended by one's department.

FORCE INDEX
Height-Weight Groups

Score	S.S.	S.M.	S.H.	M.S.	M.M.	M.H.	T.S.	T.M.	T.H.
100	2468	2412	2918	2439	2699	3312	2300	2858	3304
99	2448	2398	2896	2422	2682	3286	2287	2838	3281
98	2428	2384	2874	2405	2664	3261	2275	2818	3257
97	2408	2369	2852	2388	2647	3236	2262	2798	3233
96	2389	2355	2830	2371	2629	3210	2250	2778	3210
95	2369	2341	2808	2355	2612	3185	2237	2758	3186
94	2349	2327	2786	2338	2594	3160	2225	2738	3162
93	2329	2312	2764	2321	2577	3134	2212	2718	3139
92	2310	2298	2742	2304	2559	3109	2200	2698	3115
91	2290	2284	2720	2287	2542	3084	2187	2678	3091
90	2270	2270	2698	2271	2524	3058	2175	2658	3068
89	2250	2256	2676	2254	2507	3033	2162	2638	3044
88	2230	2241	2654	2237	2489	3008	2150	2618	3021
87	2211	2227	2632	2220	2472	2982	2137	2598	2997
86	2191	2213	2610	2203	2454	2957	2125	2578	2973
85	2171	2199	2588	2186	2436	2932	2112	2558	2950
84	2152	2184	2566	2170	2419	2906	2100	2538	2926
83	2132	2170	2543	2153	2401	2881	2087	2518	2902
82	2112	2156	2521	2136	2384	2856	2075	2498	2879
81	2092	2142	2499	2119	2366	2831	2062	2478	2855
80	2073	2128	2477	2102	2349	2805	2050	2458	2831
79	2053	2113	2455	2086	2331	2780	2037	2438	2808
78	2033	2099	2433	2069	2314	2755	2025	2417	2784
77	2013	2085	2411	2052	2296	2729	2012	2397	2760
76	1994	2071	2389	2035	2279	2704	2000	2377	2737
75	1974	2057	2367	2018	2261	2677	1987	2357	2713
74	1954	2042	2345	2002	2244	2653	1975	2337	2690
73	1935	2028	2323	1985	2226	2628	1962	2317	2666
72	1915	2014	2301	1968	2209	2603	1950	2297	2642
71	1895	2000	2279	1951	2191	2578	1937	2277	2619
70	1875	1985	2257	1934	2174	2552	1925	2257	2595
69	1856	1971	2235	1918	2156	2527	1912	2237	2571
68	1836	1957	2213	1901	2138	2502	1900	2217	2548
67	1816	1943	2191	1884	2121	2476	1887	2197	2524
66	1796	1929	2169	1867	2103	2451	1875	2177	2500
65	1777	1914	2147	1850	2086	2426	1862	2157	2477
64	1757	1900	2125	1833	2068	2400	1850	2137	2453
63	1737	1886	2103	1817	2051	2375	1837	2117	2430
62	1717	1872	2081	1800	2033	2350	1825	2097	2406
61	1698	1857	2059	1783	2016	2324	1812	2077	2382
60	1678	1843	2037	1766	1998	2299	1800	2057	2359
59	1658	1829	2015	1749	1981	2274	1787	2037	2335
58	1638	1815	1993	1733	1963	2248	1775	2017	2311
57	1619	1801	1970	1716	1946	2223	1762	1997	2288
56	1599	1786	1948	1699	1928	2198	1750	1977	2264
55	1579	1772	1926	1682	1911	2172	1737	1957	2240
54	1559	1758	1904	1665	1893	2147	1725	1937	2217
53	1540	1744	1882	1649	1875	2122	1712	1917	2193
52	1520	1729	1860	1632	1858	2097	1700	1897	2169
51	1500	1715	1838	1615	1840	2071	1687	1877	2146
50	1481	1701	1816	1598	1823	2046	1675	1857	2122
49	1461	1687	1794	1581	1805	2021	1662	1837	2099
48	1441	1673	1772	1564	1788	1995	1650	1817	2075
47	1421	1658	1750	1548	1770	1970	1637	1797	2051
46	1402	1644	1728	1531	1753	1945	1625	1777	2028
45	1382	1630	1706	1514	1735	1919	1612	1757	2004
44	1362	1616	1684	1497	1718	1894	1600	1737	1980
43	1342	1601	1662	1480	1700	1869	1587	1717	1957
42	1323	1587	1640	1464	1683	1843	1575	1696	1933
41	1303	1573	1618	1447	1665	1818	1562	1676	1909
40	1283	1559	1596	1430	1648	1793	1550	1656	1886
39	1263	1545	1574	1413	1630	1768	1537	1636	1862
38	1244	1530	1552	1396	1613	1742	1525	1616	1839
37	1224	1516	1530	1380	1595	1717	1512	1596	1815
36	1204	1502	1508	1363	1577	1692	1500	1576	1791
35	1184	1488	1486	1346	1560	1666	1487	1556	1768
34	1165	1473	1464	1329	1542	1641	1475	1536	1744
33	1145	1459	1441	1312	1525	1616	1462	1516	1720
32	1125	1445	1419	1296	1507	1590	1450	1496	1697
31	1105	1431	1397	1279	1490	1565	1437	1476	1673
30	1086	1417	1375	1262	1472	1540	1425	1456	1649
29	1066	1402	1353	1245	1455	1514	1412	1436	1626
28	1046	1388	1331	1228	1437	1489	1400	1416	1602
27	1026	1374	1309	1211	1420	1464	1387	1396	1578
26	1007	1360	1287	1195	1402	1438	1375	1376	1555
25	987	1346	1265	1178	1385	1413	1362	1356	1531
24	967	1331	1243	1161	1367	1388	1350	1336	1508
23	947	1317	1221	1144	1350	1363	1337	1316	1484
22	928	1303	1199	1127	1332	1337	1325	1296	1460
21	908	1289	1177	1111	1315	1312	1312	1276	1437
20	888	1274	1155	1094	1297	1287	1300	1256	1413
19	869	1260	1133	1077	1279	1261	1287	1236	1389
18	849	1246	1111	1060	1262	1236	1275	1216	1366
17	829	1232	1089	1043	1244	1211	1262	1196	1342
16	809	1218	1067	1027	1227	1185	1250	1176	1318
15	790	1203	1045	1010	1209	1160	1237	1156	1295
14	770	1189	1023	993	1192	1135	1225	1136	1271
13	750	1175	1001	976	1174	1109	1212	1116	1248
12	730	1161	979	959	1157	1084	1200	1096	1224
11	711	1146	957	943	1139	1059	1187	1076	1200
10	691	1132	935	926	1122	1033	1175	1056	1177
9	671	1118	913	909	1104	1008	1162	1036	1153
8	651	1104	890	892	1087	983	1150	1015	1129
7	632	1090	868	875	1069	958	1137	995	1106
6	612	1075	846	858	1051	932	1125	975	1082
5	592	1061	824	842	1034	907	1112	955	1058
4	572	1047	802	825	1017	882	1100	935	1035
3	553	1033	780	808	999	856	1087	915	1011
2	533	1018	758	791	981	831	1075	895	987
1	513	1004	736	774	964	806	1062	875	964

LARSON'S SPRINGFIELD STRENGTH TEST
Height-Weight Groups

Score	S.S.	S.M.	S.H.	M.S.	M.M.	M.H.	T.S.	T.M.	T.H.
100	497	488	487	445	456	473	435	448	465
99	493	485	484	442	453	469	432	445	461
98	489	481	480	439	450	466	429	442	457
97	485	478	476	435	446	462	426	439	453
96	480	474	472	432	443	458	423	436	449
95	476	471	468	429	440	454	420	433	445
94	472	467	464	426	437	451	417	430	441
93	468	464	460	423	434	447	414	426	437
92	463	460	456	419	431	443	411	423	433
91	459	457	452	416	428	440	408	420	429
90	455	453	448	413	425	436	405	417	425
89	451	450	445	410	422	432	402	414	421
88	446	446	441	407	419	428	399	411	417
87	442	443	437	403	416	425	396	408	413
86	438	439	433	400	413	421	393	405	409
85	434	436	429	397	409	417	390	401	405
84	429	432	425	394	406	414	387	398	401
83	425	429	421	391	403	410	384	395	397
82	421	425	417	388	400	406	381	392	393
81	417	422	413	384	397	402	378	389	389
80	412	418	409	381	394	399	375	386	385
79	408	415	406	378	391	395	372	382	381
78	404	411	402	375	388	391	369	380	377
77	400	408	398	372	385	388	366	376	373
76	396	404	394	368	382	384	363	373	369
75	391	401	390	365	379	380	360	370	365
74	387	397	386	362	375	376	356	367	361
73	383	394	382	359	372	373	353	364	357
72	379	390	378	356	369	369	350	361	353
71	374	387	374	352	366	365	347	358	349
70	370	383	370	349	363	362	344	355	345
69	366	380	367	346	360	358	341	351	341
68	362	376	363	343	357	354	338	348	337
67	357	373	359	340	354	351	335	345	333
66	353	369	355	336	351	347	332	342	329
65	349	366	351	333	348	343	329	339	325
64	345	362	347	330	345	339	326	336	321
63	340	359	343	327	341	336	323	333	317
62	336	355	339	324	338	332	320	329	313
61	332	352	335	321	335	328	317	326	309
60	328	348	331	317	332	325	314	323	305
59	323	345	328	314	329	321	311	320	301
58	319	341	324	311	326	317	308	317	297
57	315	338	320	308	323	313	305	314	293
56	311	334	316	305	320	310	302	311	289
55	306	330	312	301	317	306	299	308	285
54	302	327	308	298	314	302	296	304	281
53	298	323	304	295	311	299	293	301	277
52	294	320	300	292	307	295	290	298	273
51	290	316	296	289	304	291	287	295	269
50	285	313	292	285	301	287	284	292	265
49	281	309	289	282	298	284	281	289	261
48	277	306	285	279	295	280	278	286	257
47	273	302	281	276	292	276	275	283	253
46	268	299	277	273	289	273	272	279	249
45	264	295	273	269	286	269	269	276	245
44	260	292	269	266	283	265	266	273	241
43	256	288	265	263	280	261	263	270	237
42	251	285	261	260	277	258	260	267	233
41	247	281	257	257	273	254	257	264	229
40	243	278	253	254	270	250	254	261	225
39	239	274	250	250	267	247	251	257	221
38	234	271	246	247	264	243	248	254	217
37	230	267	242	244	261	239	245	251	213
36	226	264	238	241	258	236	242	248	209
35	222	260	234	238	255	232	239	245	205
34	217	257	230	234	252	228	236	242	201
33	213	253	226	231	249	224	233	239	197
32	209	250	222	228	246	221	230	236	193
31	205	246	218	225	243	217	227	232	189
30	200	243	214	222	239	213	224	229	185
29	196	239	211	218	236	210	221	226	181
28	192	236	207	215	233	206	218	223	177
27	188	232	203	212	230	202	215	220	173
26	184	229	199	209	227	198	212	217	169
25	179	225	195	206	224	195	209	214	165
24	175	222	191	202	221	191	205	211	161
23	171	218	187	199	218	187	202	207	157
22	166	215	183	196	215	184	199	204	153
21	162	211	179	193	212	180	196	201	149
20	158	208	175	190	209	176	193	198	145
19	154	204	172	187	205	172	190	195	141
18	150	201	168	183	202	169	187	192	137
17	145	197	164	180	199	165	184	189	133
16	141	194	160	177	196	161	181	185	129
15	137	190	156	174	193	158	178	182	125
14	133	187	152	171	190	154	175	179	121
13	128	183	148	167	187	150	172	176	117
12	124	180	144	164	184	146	169	173	113
11	120	176	140	161	181	143	166	170	109
10	116	173	136	158	178	139	163	167	105
9	111	169	133	155	175	135	160	164	101
8	107	166	129	151	171	132	157	160	97
7	103	162	125	148	168	128	154	157	93
6	99	158	121	145	165	124	151	154	89
5	94	155	117	142	162	121	148	151	85
4	90	151	113	139	159	117	145	148	81
3	86	148	109	135	156	113	142	145	77
2	82	144	105	132	153	109	139	142	73
1	77	141	101	129	150	106	136	139	69

PHYSICAL CAPACITY INDEX
Height-Weight Groups

Score	S.S.	S.M.	S.H.	M.S.	M.M.	M.H.	T.S.	T.M.	T.H.
100	524	632	702	519	674	705	585	579	776
99	519	626	695	515	668	698	580	575	769
98	514	620	687	510	662	692	575	571	763
97	508	615	680	506	656	686	570	568	756
96	503	609	673	502	650	680	566	564	749
95	498	604	666	498	644	674	561	560	743
94	493	598	658	494	638	667	556	556	736
93	488	593	651	490	631	661	551	553	729
92	483	587	644	486	625	655	546	549	722
91	477	582	637	482	619	649	542	545	716
90	472	576	629	478	613	542	537	542	709
89	467	571	622	474	607	636	532	538	702
88	462	565	615	470	601	630	527	534	695
87	457	560	608	465	595	624	522	531	689
86	452	554	600	461	588	617	518	527	682
85	446	549	593	457	582	611	513	523	675
84	441	543	586	453	576	605	508	519	668
83	436	538	579	449	570	599	503	516	662
82	431	532	571	445	564	593	499	512	655
81	426	527	564	441	558	586	494	508	648
80	421	521	557	437	552	580	489	505	642
79	415	516	550	433	545	574	484	501	635
78	410	510	542	429	539	568	480	497	628
77	405	505	535	425	533	561	475	494	621
76	400	499	528	420	527	555	470	490	614
75	395	494	520	416	521	549	465	486	608
74	390	488	513	412	515	543	460	483	601
73	385	482	506	408	509	536	456	479	594
72	379	477	499	404	503	530	451	475	588
71	374	471	492	400	496	524	446	471	581
70	369	466	484	396	490	518	441	468	574
69	364	460	477	392	484	512	437	464	567
68	359	455	470	388	478	505	432	460	561
67	354	449	463	384	472	499	427	457	554
66	348	444	455	380	466	493	422	453	547
65	343	438	448	375	460	487	417	449	540
64	338	433	441	371	453	480	413	446	534
63	333	427	434	367	447	474	408	442	527
62	328	422	426	363	441	468	403	438	520
61	323	416	419	359	435	462	398	435	513
60	317	411	412	355	429	456	394	431	507
59	312	405	405	351	423	449	389	427	500
58	307	400	397	347	417	443	384	424	493
57	302	394	390	343	410	437	379	420	486
56	297	389	383	339	404	431	374	416	480
55	292	383	376	335	398	424	370	412	473
54	286	378	368	331	392	418	365	409	466
53	281	372	361	326	386	412	360	405	459
52	276	367	354	322	380	406	355	401	453
51	271	361	347	318	374	399	351	398	446
50	266	356	339	314	367	393	346	394	439
49	261	350	332	310	361	387	341	390	432
48	256	344	325	306	355	381	336	387	426
47	250	339	318	302	349	375	331	383	419
46	245	333	310	298	343	368	327	379	412
45	240	328	303	294	337	362	322	376	406
44	235	322	296	290	331	356	317	372	399
43	230	317	289	286	324	350	312	368	392
42	225	311	281	281	318	343	308	364	385
41	219	306	274	277	312	337	303	361	379
40	214	300	267	273	306	331	298	357	372
39	209	295	260	269	300	325	293	353	365
38	204	289	252	265	294	318	288	350	358
37	199	284	245	261	288	312	284	346	352
36	194	278	238	257	281	306	279	342	345
35	188	273	231	253	275	300	274	339	338
34	183	267	223	249	269	294	269	335	331
33	178	262	216	245	263	287	264	331	325
32	173	256	209	241	257	281	260	328	318
31	168	251	202	236	251	275	255	324	311
30	163	245	194	232	245	269	250	320	304
29	157	240	187	228	239	262	245	317	298
28	152	234	180	224	232	256	241	313	291
27	147	229	173	220	226	250	236	309	284
26	142	223	165	216	220	244	231	305	277
25	137	218	158	212	214	237	226	302	271
24	132	212	151	208	208	231	221	298	264
23	127	206	144	204	202	225	217	294	257
22	121	201	136	200	196	219	212	291	250
21	116	195	129	196	189	213	207	287	244
20	111	190	122	191	183	206	202	283	237
19	106	184	115	187	177	200	198	280	230
18	101	179	107	183	171	194	193	276	224
17	96	173	100	179	165	188	188	272	217
16	90	168	93	175	159	181	183	269	210
15	85	162	86	171	153	175	178	265	203
14	80	157	78	167	146	169	174	261	197
13	75	151	71	163	140	163	169	257	190
12	70	146	64	159	134	156	164	254	183
11	65	140	57	155	128	150	159	250	176
10	59	135	49	151	122	144	155	246	170
9	54	129	42	146	116	138	150	243	163
8	49	124	35	142	110	132	145	239	156
7	44	118	28	138	103	125	140	235	149
6	39	113	20	134	97	119	135	232	143
5	34	107	13	130	91	113	131	228	136
4	28	102	6	126	85	107	126	224	129
3	23	96	0	122	79	100	121	221	122
2	18	91	0	118	73	94	116	217	116
1	13	85	0	114	67	88	112	213	109

PHYSICAL FITNESS INDEX
Height-Weight Groups

Score	S.S.	S.M.	S.H.	M.S.	M.M.	M.H.	T.S.	T.M.	T.H.
100	169	142	134	143	140	125	136	123	118
99	168	141	133	142	139	124	135	122	117
98	167	140	132	141	138	123	134	121	116
97	165	139	131	140	137	122	133	120	115
96	164	138	130	139	136	121	132	120	114
95	163	137	129	138	135	120	131	119	113
94	162	136	128	137	134	119	130	118	112
93	160	135	127	136	133	118	129	117	111
92	159	134	126	136	132	117	128	116	110
91	158	134	125	135	131	116	127	116	109
90	156	133	124	134	130	115	126	115	108
89	155	132	122	133	129	114	125	114	107
88	154	131	121	132	128	113	124	113	106
87	152	130	120	131	127	112	123	112	105
86	151	129	119	130	126	111	122	111	104
85	150	128	118	129	125	110	121	110	103
84	149	127	117	128	124	109	120	110	102
83	147	126	116	127	123	108	119	109	101
82	146	125	115	126	122	107	118	108	101
81	145	124	114	125	120	106	118	107	100
80	143	123	113	125	119	105	117	106	99
79	142	123	112	124	118	104	116	106	98
78	141	122	111	123	117	103	115	105	97
77	139	121	109	122	116	102	114	104	96
76	138	120	108	121	115	101	113	103	95
75	137	119	107	120	114	100	112	102	94
74	136	118	106	119	113	99	111	101	93
73	134	117	105	118	112	98	110	101	92
72	133	116	104	117	111	97	109	100	91
71	132	115	103	116	110	96	108	99	90
70	130	114	102	115	109	95	107	98	89
69	129	113	101	114	108	94	106	97	88
68	128	113	100	113	107	93	105	96	87
67	127	112	99	113	106	92	104	96	86
66	125	111	97	112	105	91	103	95	85
65	124	110	96	111	104	90	102	94	84
64	123	109	95	110	103	89	102	93	83
63	121	108	94	109	102	88	101	92	83
62	120	107	93	108	101	87	100	91	82
61	119	106	92	107	100	86	99	91	81
60	117	105	91	106	99	85	98	90	80
59	116	104	90	105	98	84	97	89	79
58	115	103	89	104	97	83	96	88	78
57	114	103	88	103	96	82	95	87	77
56	112	102	87	102	94	81	94	87	76
55	111	101	85	102	93	80	93	86	75
54	110	100	84	101	92	79	92	85	74
53	108	99	83	100	91	78	91	84	73
52	107	98	82	99	90	77	90	83	72
51	106	97	81	98	89	76	89	82	71
50	105	96	80	97	88	75	88	82	70
49	103	95	79	96	87	74	87	81	69
48	102	94	78	95	86	73	86	80	68
47	101	93	77	94	85	72	86	79	67
46	99	93	76	93	84	71	85	78	66
45	98	92	75	92	83	70	84	77	65
44	97	91	73	91	82	69	83	77	64
43	95	90	72	90	81	68	82	76	63
42	94	89	71	90	80	67	81	75	63
41	93	88	70	89	79	66	80	74	62
40	92	87	69	88	78	65	79	73	61
39	90	86	68	87	77	64	78	72	60
38	89	85	67	86	76	63	77	72	59
37	88	84	66	85	75	62	76	71	58
36	86	83	65	84	74	61	75	70	57
35	85	83	64	83	73	60	74	69	56
34	84	82	63	82	72	59	73	68	55
33	82	81	62	81	71	58	72	67	54
32	81	80	60	80	70	57	71	67	53
31	80	79	59	79	68	56	70	66	52
30	79	78	58	79	67	55	69	65	51
29	77	77	57	78	66	54	68	64	50
28	76	76	56	77	65	53	68	63	49
27	75	75	55	76	64	52	67	62	48
26	73	74	54	75	63	51	66	62	47
25	72	73	53	74	62	50	65	61	46
24	71	73	52	73	61	49	64	60	45
23	70	72	51	72	60	48	63	59	44
22	68	71	49	71	59	47	62	58	44
21	67	70	48	70	58	46	61	57	43
20	66	69	47	69	57	45	60	57	42
19	64	68	46	68	56	44	59	56	41
18	63	67	45	67	55	43	58	55	40
17	62	66	44	67	54	42	57	54	39
16	60	65	43	66	53	41	56	53	38
15	59	64	42	65	52	40	55	53	37
14	58	63	41	64	51	39	54	52	36
13	57	63	40	63	50	38	53	51	35
12	55	62	39	62	49	37	52	50	34
11	54	61	37	61	48	36	51	49	33
10	53	60	36	60	47	35	50	48	32
9	51	59	35	59	46	34	49	48	31
8	50	58	34	58	45	33	49	47	30
7	49	57	33	57	44	32	48	46	29
6	47	56	32	56	42	31	47	45	28
5	46	55	31	56	41	30	46	44	27
4	45	54	30	55	40	29	45	43	26
3	44	53	29	54	39	28	44	43	25
2	42	53	28	53	38	27	43	42	25
1	41	52	27	52	37	26	42	41	24

STRENGTH INDEX
Height-Weight Groups

Score	S.S.	S.M.	S.H.	M.S.	M.M.	M.H.	T.S.	T.M.	T.H.
100	2147	2355	2607	2320	2606	2807	2529	2535	3041
99	2130	2337	2588	2303	2587	2786	2509	2520	3018
98	2114	2320	2569	2285	2567	2765	2490	2504	2996
97	2097	2302	2549	2267	2548	2744	2471	2488	2973
96	2080	2284	2530	2250	2528	2723	2452	2472	2950
95	2064	2267	2511	2232	2509	2702	2433	2457	2927
94	2047	2249	2492	2215	2489	2681	2414	2441	2904
93	2030	2232	2472	2197	2470	2660	2395	2425	2881
92	2014	2214	2453	2179	2450	2639	2376	2409	2858
91	1997	2197	2434	2162	2431	2618	2357	2394	2836
90	1980	2179	2415	2144	2411	2597	2338	2378	2813
89	1964	2162	2395	2127	2391	2576	2319	2362	2790
88	1947	2144	2376	2109	2372	2555	2300	2346	2767
87	1930	2127	2357	2091	2352	2534	2280	2331	2744
86	1914	2109	2338	2074	2333	2513	2261	2315	2721
85	1897	2091	2318	2056	2313	2493	2242	2299	2698
84	1881	2074	2299	2039	2294	2472	2223	2283	2676
83	1864	2056	2280	2021	2274	2451	2204	2268	2653
82	1847	2039	2261	2003	2255	2430	2185	2252	2630
81	1831	2021	2241	1986	2235	2409	2166	2236	2607
80	1814	2004	2222	1968	2216	2388	2147	2220	2584
79	1797	1986	2203	1951	2196	2367	2128	2205	2561
78	1781	1969	2184	1933	2177	2346	2109	2189	2538
77	1764	1951	2164	1915	2157	2325	2090	2173	2516
76	1747	1933	2145	1898	2138	2304	2071	2157	2493
75	1731	1916	2126	1880	2118	2283	2052	2142	2470
74	1714	1898	2106	1863	2099	2262	2032	2126	2447
73	1697	1881	2087	1845	2079	2241	2013	2110	2424
72	1681	1863	2068	1827	2059	2220	1994	2094	2401
71	1664	1846	2049	1810	2040	2199	1975	2079	2378
70	1647	1828	2029	1792	2020	2178	1956	2063	2356
69	1631	1811	2010	1775	2001	2157	1937	3047	2333
68	1614	1793	1991	1757	1981	2136	1918	2031	2310
67	1597	1776	1972	1739	1962	2115	1899	2016	2287
66	1581	1758	1952	1722	1942	2094	1880	2000	2264
65	1564	1740	1933	1704	1923	2073	1861	1984	2241
64	1548	1723	1914	1687	1903	2052	1842	1968	2218
63	1531	1705	1895	1669	1884	2031	1823	1953	2196
62	1514	1688	1875	1651	1864	2010	1803	1937	2173
61	1498	1670	1856	1634	1845	1989	1784	1921	2150
60	1481	1653	1837	1616	1825	1968	1765	1905	2127
59	1464	1635	1818	1599	1806	1947	1746	1890	2104
58	1448	1618	1798	1581	1786	1926	1727	1874	2081
57	1431	1600	1779	1563	1767	1905	1708	1858	2058
56	1414	1582	1760	1546	1747	1884	1689	1842	2036
55	1398	1565	1741	1528	1727	1863	1670	1827	2013
54	1381	1547	1721	1511	1708	1842	1651	1811	1990
53	1364	1530	1702	1493	1688	1821	1632	1795	1967
52	1348	1512	1683	1475	1669	1800	1613	1779	1944
51	1331	1495	1664	1458	1649	1780	1594	1764	1921
50	1314	1477	1644	1440	1630	1759	1575	1748	1898
49	1298	1460	1625	1423	1610	1738	1555	1732	1875
48	1281	1442	1606	1405	1591	1717	1536	1716	1853
47	1264	1425	1586	1387	1571	1696	1517	1701	1830
46	1248	1407	1567	1370	1552	1675	1498	1685	1807
45	1231	1389	1548	1352	1532	1654	1479	1669	1784
44	1215	1372	1529	1335	1513	1633	1460	1653	1761
43	1198	1354	1509	1317	1493	1612	1441	1638	1738
42	1181	1337	1490	1299	1474	1591	1422	1622	1715
41	1165	1319	1471	1282	1454	1570	1403	1606	1693
40	1148	1302	1452	1264	1435	1549	1384	1590	1670
39	1131	1284	1432	1247	1415	1528	1365	1575	1647
38	1115	1267	1413	1229	1395	1507	1346	1559	1624
37	1098	1249	1394	1211	1376	1486	1326	1543	1601
36	1081	1231	1375	1194	1356	1465	1307	1527	1578
35	1065	1214	1355	1176	1337	1444	1288	1512	1555
34	1048	1196	1336	1159	1317	1423	1269	1496	1533
33	1031	1179	1317	1141	1298	1402	1250	1480	1510
32	1015	1161	1298	1123	1278	1381	1231	1464	1487
31	998	1144	1278	1106	1259	1360	1212	1449	1464
30	981	1126	1259	1088	1239	1339	1193	1433	1441
29	965	1109	1240	1071	1220	1318	1174	1417	1418
28	948	1091	1221	1053	1200	1297	1155	1401	1395
27	931	1074	1201	1035	1181	1276	1136	1386	1373
26	915	1056	1182	1018	1161	1255	1117	1370	1350
25	898	1038	1163	1000	1142	1234	1098	1354	1327
24	882	1021	1143	983	1122	1213	1078	1338	1304
23	865	1003	1124	965	1102	1192	1059	1323	1281
22	848	986	1105	947	1083	1171	1040	1307	1258
21	832	968	1086	930	1063	1150	1021	1291	1235
20	815	951	1066	912	1044	1129	1002	1275	1213
19	798	933	1047	895	1024	1108	983	1260	1190
18	782	916	1028	877	1005	1088	964	1244	1167
17	765	898	1009	859	985	1067	945	1228	1144
16	748	880	989	842	966	1046	926	1212	1121
15	732	863	970	824	946	1025	907	1197	1098
14	715	845	951	807	927	1004	888	1181	1075
13	698	828	932	789	907	983	869	1165	1053
12	682	810	912	771	888	962	849	1149	1030
11	665	793	893	754	868	941	830	1134	1007
10	648	775	874	736	849	920	811	1118	984
9	632	758	855	719	829	899	792	1102	961
8	615	740	835	701	810	878	773	1086	938
7	598	723	816	683	790	857	754	1071	915
6	582	705	797	666	770	836	735	1055	893
5	565	687	778	648	751	815	716	1039	870
4	549	670	758	631	731	794	697	1023	847
3	532	652	739	613	712	773	678	1008	824
2	515	635	720	595	692	752	659	992	801
1	499	617	701	578	673	731	640	976	778

FORCE INDEX
Classification Index Groups

Score	Class A up to 874	Class B 875-899	Class C 900-924	Class D 925-949	Class E 950-974	Class F 975 and up
100	2594	2686	2927	3115	2990	3433
99	2575	2668	2906	3093	2970	3408
98	2557	2650	2884	3071	2950	3382
97	2538	2632	2863	3048	2930	3357
96	2520	2614	2841	3026	2910	3332
95	2502	2596	2820	3004	2891	3307
94	2483	2578	2799	2981	2871	3281
93	2465	2560	2778	2959	2851	3256
92	2446	2542	2756	2937	2831	3231
91	2428	2523	2734	2914	2811	3205
90	2409	2505	2713	2892	2792	3180
89	2391	2487	2692	2870	2772	3155
88	2373	2469	2670	2847	2752	3130
87	2354	2451	2649	2825	2732	3104
86	2336	2433	2627	2803	2712	3079
85	2317	2415	2606	2780	2693	3054
84	2299	2397	2584	2758	2673	3028
83	2280	2379	2563	2736	2653	3003
82	2262	2361	2542	2713	2633	2978
81	2244	2343	2520	2691	2613	2952
80	2225	2324	2499	2669	2594	2927
79	2207	2306	2477	2646	2574	2902
78	2188	2288	2456	2624	2554	2877
77	2170	2270	2435	2602	2534	2851
76	2151	2252	2413	2580	2514	2826
75	2133	2234	2392	2557	2495	2801
74	2115	2216	2370	2535	2475	2775
73	2096	2198	2349	2513	2455	2750
72	2078	2180	2327	2490	2435	2725
71	2059	2162	2306	2468	2415	2700
70	2041	2144	2285	2446	2396	2674
69	2022	2125	2263	2423	2376	2649
68	2004	2107	2242	2401	2356	2624
67	1986	2089	2220	2379	2336	2598
66	1967	2071	2199	2356	2316	2573
65	1949	2053	2177	2334	2297	2548
64	1930	2035	2156	2312	2277	2523
63	1912	2017	2135	2289	2257	2498
62	1893	1999	2113	2267	2237	2472
61	1875	1981	2092	2245	2217	2447
60	1856	1963	2070	2222	2198	2421
59	1838	1945	2049	2200	2178	2396
58	1820	1926	2028	2178	2158	2371
57	1801	1908	2006	2155	2138	2346
56	1783	1890	1985	2133	2118	2320
55	1764	1872	1963	2111	2099	2295
54	1746	1854	1942	2088	2079	2270
53	1727	1836	1920	2066	2059	2244
52	1709	1818	1899	2044	2039	2219
51	1691	1800	1878	2022	2019	2194
50	1672	1782	1856	1999	2000	2169
49	1654	1764	1835	1977	1980	2143
48	1635	1746	1813	1955	1960	2118
47	1617	1727	1792	1932	1940	2093
46	1598	1709	1770	1910	1920	2067
45	1580	1691	1749	1888	1901	2042
44	1562	1673	1728	1865	1881	2017
43	1543	1655	1706	1843	1861	1991
42	1525	1637	1685	1821	1841	1966
41	1506	1619	1663	1798	1821	1941
40	1488	1601	1642	1776	1802	1916
39	1469	1583	1621	1754	1782	1890
38	1451	1565	1599	1731	1762	1865
37	1433	1547	1578	1709	1742	1840
36	1414	1528	1556	1687	1722	1814
35	1396	1510	1535	1664	1703	1789
34	1377	1492	1513	1642	1683	1764
33	1359	1474	1492	1620	1663	1739
32	1340	1456	1471	1597	1643	1713
31	1322	1438	1449	1575	1623	1688
30	1304	1420	1428	1553	1604	1663
29	1285	1402	1406	1530	1584	1637
28	1267	1384	1385	1508	1564	1612
27	1248	1366	1364	1486	1544	1587
26	1230	1348	1342	1464	1524	1562
25	1211	1329	1321	1441	1505	1536
24	1193	1311	1299	1419	1485	1511
23	1175	1293	1278	1397	1465	1486
22	1156	1275	1256	1374	1445	1460
21	1138	1257	1235	1352	1425	1435
20	1119	1239	1214	1330	1406	1410
19	1101	1221	1192	1307	1386	1385
18	1082	1203	1171	1285	1366	1359
17	1064	1185	1149	1263	1346	1334
16	1046	1167	1128	1240	1326	1309
15	1027	1149	1106	1218	1307	1283
14	1009	1130	1085	1196	1287	1258
13	990	1112	1064	1173	1267	1233
12	972	1094	1042	1151	1247	1207
11	953	1076	1021	1129	1227	1182
10	935	1058	999	1106	1208	1157
9	917	1040	978	1084	1188	1132
8	898	1022	957	1062	1168	1106
7	880	1004	935	1039	1148	1081
6	861	986	914	1017	1128	1056
5	843	968	892	995	1109	1030
4	824	950	871	972	1089	1005
3	806	931	849	950	1069	980
2	788	913	828	928	1049	955
1	769	895	807	906	1029	929

LARSON SPRINGFIELD STRENGTH TEST
Classification Index Groups

Score	Class A up to 874	Class B 875-899	Class C 900-924	Class D 925-949	Class E 950-974	Class F 975 and up
100	485	474	455	466	489	482
99	481	470	452	462	485	477
98	477	467	448	459	480	472
97	474	463	445	455	476	467
96	470	460	442	451	472	462
95	466	456	439	448	467	458
94	463	453	436	444	463	453
93	459	449	432	441	459	448
92	455	446	429	437	454	443
91	451	442	426	433	450	438
90	448	439	423	430	446	434
89	444	435	420	426	441	429
88	440	432	416	422	437	424
87	437	428	413	419	433	419
86	433	425	410	415	428	414
85	429	421	407	412	424	410
84	425	418	403	408	420	405
83	422	414	400	404	415	400
82	418	411	397	401	411	395
81	414	407	394	397	407	390
80	411	404	391	393	402	386
79	407	400	387	390	398	381
78	403	397	384	386	394	376
77	399	393	381	382	389	371
76	396	390	378	379	385	366
75	392	386	374	375	381	362
74	388	383	371	372	376	357
73	385	379	368	368	372	352
72	381	376	365	364	368	347
71	377	372	362	361	363	342
70	373	369	358	357	359	338
69	370	365	355	353	355	333
68	366	361	352	350	350	328
67	362	358	349	346	346	323
66	359	354	345	343	342	318
65	355	351	342	339	337	314
64	351	347	339	335	333	309
63	347	344	336	332	329	304
62	344	340	333	328	324	299
61	340	337	329	324	320	294
60	336	333	326	321	316	290
59	333	330	323	317	311	285
58	329	326	320	314	307	280
57	325	323	316	310	302	275
56	322	319	313	306	298	270
55	318	316	310	303	294	266
54	314	312	307	299	290	261
53	310	309	304	295	285	256
52	307	305	300	292	281	251
51	303	302	297	288	277	246
50	299	298	294	284	272	242
49	296	295	291	281	268	237
48	292	291	287	277	264	232
47	288	288	284	274	259	227
46	284	284	281	270	255	222
45	281	281	278	266	251	218
44	277	277	275	263	246	213
43	273	274	271	259	242	208
42	270	270	268	255	238	203
41	266	267	265	252	233	198
40	262	263	262	248	229	194
39	258	260	259	245	225	189
38	255	256	255	241	220	184
37	251	253	252	237	216	179
36	247	249	249	234	212	174
35	244	246	246	230	207	170
34	240	242	242	226	203	165
33	236	239	239	223	199	160
32	232	235	236	219	194	155
31	229	232	233	216	190	150
30	225	228	230	212	186	146
29	221	225	226	208	181	141
28	218	221	223	205	177	136
27	214	218	220	201	173	131
26	210	214	217	197	168	126
25	207	211	213	194	164	122
24	203	207	210	190	160	117
23	199	204	207	186	155	112
22	195	200	204	183	151	107
21	192	197	201	179	147	102
20	188	193	197	176	142	98
19	184	190	194	172	138	93
18	181	186	191	168	134	88
17	177	182	188	165	129	83
16	173	179	184	161	125	78
15	169	175	181	157	121	74
14	166	172	178	154	117	69
13	162	168	175	150	112	64
12	158	165	172	147	108	59
11	155	161	168	143	104	54
10	151	158	165	139	99	50
9	147	154	162	136	95	45
8	143	151	159	132	91	40
7	140	147	155	128	86	35
6	136	144	152	125	82	30
5	132	140	149	121	78	26
4	129	137	146	117	73	21
3	125	133	143	114	69	16
2	121	130	139	110	65	11
1	117	126	136	107	60	6

PHYSICAL CAPACITY INDEX
Classification Index Groups

Score	Class A up to 874	Class B 875-899	Class C 900-924	Class D 925-949	Class E 950-974	Class F 975 and up
100	578	644	733	823	613	691
99	573	638	726	814	608	686
98	568	632	718	805	604	681
97	562	626	710	795	599	677
96	557	620	702	786	594	672
95	552	614	694	776	589	667
94	546	608	687	767	584	662
93	541	602	679	758	579	657
92	535	596	671	748	574	653
91	530	590	663	739	570	648
90	525	584	655	729	565	643
89	519	578	647	720	560	638
88	514	572	640	711	555	633
87	509	566	632	701	550	629
86	503	560	624	692	545	624
85	498	554	616	682	540	619
84	492	548	608	673	535	614
83	487	542	600	664	531	609
82	482	536	593	654	526	605
81	476	530	585	645	521	600
80	471	524	577	636	516	595
79	466	518	569	626	511	590
78	460	512	561	617	506	586
77	455	506	553	607	501	581
76	450	500	546	598	497	576
75	444	494	538	589	492	571
74	439	488	530	579	487	566
73	433	482	522	570	482	562
72	428	476	514	560	477	557
71	423	470	506	551	472	552
70	417	464	499	542	467	547
69	412	458	491	532	463	542
68	407	452	483	523	458	538
67	401	446	475	513	453	533
66	396	440	467	504	448	528
65	390	434	459	495	443	523
64	385	428	452	485	438	518
63	380	422	444	476	433	514
62	374	416	436	466	429	509
61	369	410	428	457	524	504
60	364	404	420	448	419	499
59	358	398	412	438	414	495
58	353	392	405	429	409	490
57	347	386	397	420	404	485
56	342	380	389	410	399	480
55	337	374	381	401	395	475
54	331	368	373	391	390	471
53	326	362	365	382	385	466
52	321	356	358	373	380	461
51	315	350	350	363	375	456
50	310	344	342	354	370	451
49	305	338	334	344	365	447
48	299	332	326	335	361	442
47	294	326	318	326	356	437
46	288	320	311	316	351	432
45	283	314	303	307	346	427
44	278	308	295	297	341	423
43	272	302	287	288	336	418
42	267	296	279	279	331	413
41	262	290	272	269	327	408
40	256	284	264	260	322	404
39	251	278	256	251	317	399
38	245	272	248	241	312	394
37	240	266	240	232	307	389
36	235	260	232	222	302	384
35	229	254	225	213	297	380
34	224	248	217	204	292	375
33	219	242	209	194	288	370
32	213	236	201	185	283	365
31	208	230	193	175	278	360
30	202	224	185	166	273	356
29	197	218	178	157	268	351
28	192	212	170	147	263	346
27	186	206	162	138	258	341
26	181	200	154	128	254	336
25	176	194	146	119	249	332
24	170	188	138	110	244	327
23	165	182	131	100	239	322
22	160	176	123	91	234	317
21	154	170	115	82	229	312
20	149	164	107	72	224	308
19	143	158	99	63	220	303
18	138	152	91	53	215	298
17	133	146	84	44	210	293
16	127	140	76	35	205	289
15	122	134	68	25	200	284
14	117	128	60	16	195	279
13	111	122	52	6	190	274
12	106	116	44		186	269
11	100	110	37		181	265
10	95	104	29		176	260
9	90	98	21		171	255
8	84	92	13		166	250
7	79	86	5		161	245
6	74	80			156	241
5	68	74			152	236
4	63	68			147	231
3	58	62			142	226
2	52	56			137	221
1	47	50			132	217

PHYSICAL FITNESS INDEX
Classification Index Groups

Score	Class A up to 874	Class B 875-899	Class C 900-924	Class D 925-949	Class E 950-974	Class F 975-999	Class G 1000 and up
100	161	143	129	121	111	103	75
99	159	142	128	120	110	102	75
98	158	141	127	119	109	101	74
97	157	139	126	118	108	100	74
96	156	138	125	117	107	99	73
95	154	137	124	116	106	99	73
94	153	136	124	115	106	98	72
93	152	135	123	114	105	97	72
92	150	134	122	114	104	96	71
91	149	133	121	113	103	95	71
90	148	132	120	112	102	94	71
89	146	131	119	111	101	93	70
88	145	130	118	110	100	93	70
87	144	128	117	109	100	92	69
86	143	127	116	108	99	91	69
85	141	126	115	107	98	90	68
84	140	125	114	106	97	89	68
83	139	124	113	105	96	88	67
82	137	123	112	104	95	87	67
81	136	122	111	103	94	86	66
80	135	121	110	102	94	86	66
79	133	120	109	101	93	85	66
78	132	119	108	101	92	84	65
77	131	117	107	100	91	83	65
76	130	116	106	99	90	82	64
75	128	115	105	98	89	81	64
74	127	114	104	97	89	80	63
73	126	113	103	96	88	80	63
72	124	112	102	95	87	79	62
71	123	111	101	94	86	78	62
70	122	110	100	93	85	77	62
69	120	109	100	92	84	76	61
68	119	108	99	91	83	75	61
67	118	106	98	90	83	74	60
66	117	105	97	89	82	74	60
65	115	104	96	88	81	73	59
64	114	103	95	87	80	72	59
63	113	102	94	87	79	71	58
62	111	101	93	86	78	70	58
61	110	100	92	85	77	69	57
60	109	99	91	84	77	68	57
59	107	98	90	83	76	68	57
58	106	97	89	82	75	67	56
57	105	95	88	81	74	66	56
56	104	94	87	80	73	65	55
55	102	93	86	79	72	64	55
54	101	92	85	78	72	63	54
53	100	91	84	77	71	62	54
52	98	90	83	76	70	62	53
51	97	89	82	75	69	61	53
50	96	88	81	74	68	60	53
49	94	87	80	74	67	59	52
48	93	86	79	73	66	58	52
47	92	84	78	72	66	57	51
46	91	83	77	71	65	56	51
45	89	82	76	70	64	56	50
44	88	81	76	69	63	55	50
43	87	80	75	68	62	54	49
42	85	79	74	67	61	53	49
41	84	78	73	66	60	52	48
40	83	77	72	65	60	51	48
39	81	76	71	64	59	50	48
38	80	75	70	63	58	50	47
37	79	73	69	62	57	49	47
36	78	72	68	61	56	48	46
35	76	71	67	61	55	47	46
34	75	70	66	60	55	46	45
33	74	69	65	59	54	45	45
32	72	68	64	58	53	44	44
31	71	67	63	57	52	43	44
30	70	66	62	56	51	43	44
29	68	65	61	55	50	42	43
28	67	64	60	54	49	41	43
27	66	62	59	53	49	40	42
26	65	61	58	52	48	39	42
25	63	60	57	51	47	38	41
24	62	59	56	50	46	37	41
23	61	58	55	49	45	37	40
22	59	57	54	48	44	36	40
21	58	56	53	47	43	35	39
20	57	55	52	47	43	34	39
19	55	54	52	46	42	33	39
18	54	53	51	45	41	32	38
17	53	51	50	44	40	31	38
16	52	50	49	43	39	31	37
15	50	49	48	42	38	30	37
14	49	48	47	41	38	29	36
13	48	47	46	40	37	28	36
12	46	46	45	39	36	27	35
11	45	45	44	38	35	26	35
10	44	44	43	37	34	25	35
9	42	43	42	36	33	25	34
8	41	42	41	35	32	24	34
7	40	40	40	34	32	23	33
6	39	39	39	34	31	22	33
5	37	38	38	33	30	21	32
4	36	37	37	32	29	20	32
3	35	36	36	31	28	19	31
2	33	35	35	30	27	19	31
1	32	34	34	29	26	18	30

STRENGTH INDEX
Classification Index Groups

Score	Class A up to 874	Class B 875-899	Class C 900-924	Class D 925-949	Class E 950-974	Class F 975-999	Class G 1000 and up
100	2443	2482	2754	2878	2997	3077	2976
99	2424	2463	2734	2857	2975	3053	2951
98	2404	2443	2713	2835	2953	3028	2927
97	2384	2424	2693	2814	2932	3004	2903
96	2365	2404	2672	2793	2910	2980	2879
95	2345	2384	2652	2771	2888	2955	2854
94	2325	2365	2632	2750	2867	2931	2830
93	2306	2345	2611	2728	2845	2906	2806
92	2286	2326	2591	2707	2823	2882	2782
91	2267	2306	2571	2685	2802	2858	2758
90	2247	2287	2550	2664	2780	2833	2733
89	2227	2267	2530	2643	2759	2809	2709
88	2208	2248	2510	2621	2737	2785	2685
87	2188	2228	2489	2600	2715	2760	2661
86	2168	2208	2469	2578	2694	2736	2637
85	2149	2189	2448	2557	2672	2711	2612
84	2129	2170	2428	2536	2650	2687	2588
83	2109	2150	2408	2514	2629	2663	2564
82	2090	2131	2387	2493	2607	2638	2540
81	2070	2111	2367	2471	2586	2614	2516
80	2051	2092	2347	2450	2564	2589	2491
79	2031	2072	2326	2428	2542	2565	2467
78	2011	2052	2306	2407	2521	2541	2443
77	1992	2033	2285	2386	2499	2516	2419
76	1972	2013	2265	2364	2477	2492	2394
75	1952	1994	2245	2343	2456	2467	2370
74	1933	1974	2224	2321	2434	2443	2346
73	1913	1955	2204	2300	2412	2419	2322
72	1894	1935	2184	2278	2391	2394	2298
71	1874	1916	2163	2257	2369	2370	2273
70	1854	1896	2143	2236	2348	2345	2249
69	1835	1877	2122	2214	2326	2321	2225
68	1815	1857	2102	2193	2304	2297	2201
67	1795	1838	2082	2171	2283	2272	2177
66	1776	1818	2061	2150	2261	2248	2152
65	1756	1799	2041	2129	2239	2224	2128
64	1737	1779	2021	2107	2218	2199	2104
63	1717	1760	2000	2086	2196	2175	2080
62	1697	1740	1980	2064	2175	2150	2056
61	1678	1720	1960	2043	2153	2126	2031
60	1658	1701	1939	2021	2131	2102	2007
59	1638	1681	1919	2000	2110	2077	1983
58	1619	1662	1898	1979	2088	2053	1959
57	1599	1642	1878	1957	2066	2028	1934
56	1579	1623	1858	1936	2045	2004	1910
55	1560	1603	1837	1914	2023	1980	1886
54	1540	1584	1817	1893	2002	1955	1862
53	1521	1564	1797	1871	1980	1931	1838
52	1501	1545	1776	1850	1958	1906	1813
51	1481	1525	1756	1829	1937	1882	1789
50	1462	1506	1735	1807	1915	1858	1765
49	1442	1486	1715	1786	1893	1833	1741
48	1422	1467	1695	1764	1872	1809	1717
47	1403	1447	1674	1743	1850	1785	1692
46	1383	1428	1654	1722	1828	1760	1668
45	1364	1408	1634	1700	1807	1736	1644
44	1344	1388	1613	1679	1785	1711	1620
43	1324	1369	1593	1657	1764	1687	1596
42	1305	1349	1572	1636	1742	1663	1571
41	1285	1330	1552	1614	1720	1638	1547
40	1266	1310	1532	1593	1699	1614	1523
39	1246	1291	1511	1572	1677	1589	1499
38	1226	1271	1491	1550	1655	1565	1474
37	1207	1252	1471	1529	1634	1541	1450
36	1187	1232	1450	1507	1612	1516	1426
35	1167	1213	1430	1486	1591	1492	1402
34	1148	1193	1410	1465	1569	1467	1378
33	1128	1174	1389	1443	1547	1443	1353
32	1109	1154	1369	1422	1526	1419	1329
31	1089	1135	1348	1400	1504	1394	1305
30	1069	1115	1328	1379	1482	1370	1281
29	1049	1095	1308	1357	1461	1345	1257
28	1030	1076	1287	1336	1439	1321	1232
27	1010	1056	1267	1315	1418	1297	1208
26	991	1037	1247	1293	1396	1272	1184
25	971	1017	1226	1272	1374	1248	1160
24	951	998	1206	1250	1353	1224	1136
23	932	978	1185	1229	1331	1199	1111
22	912	959	1165	1207	1309	1175	1087
21	892	939	1145	1186	1288	1150	1063
20	873	920	1124	1165	1266	1126	1039
19	853	900	1104	1143	1244	1102	1014
18	834	881	1084	1122	1223	1077	990
17	814	861	1063	1100	1201	1053	966
16	794	842	1043	1079	1180	1028	942
15	775	822	1023	1058	1158	1004	918
14	755	803	1002	1036	1136	980	893
13	736	783	982	1015	1115	955	869
12	716	763	961	993	1093	931	845
11	696	744	941	972	1071	906	821
10	676	724	921	950	1050	882	797
9	657	705	900	929	1028	858	772
8	637	685	880	908	1007	833	748
7	618	666	860	886	985	809	724
6	598	646	839	865	963	785	700
5	578	627	819	843	942	760	676
4	559	607	798	822	920	736	651
3	539	588	778	800	898	711	627
2	519	568	758	779	877	687	603
1	500	549	737	758	855	663	578

BOOK ANNOUNCEMENTS

AN APPRECIATION OF PHYSICAL EDUCATION. Helen Ann Pendergast. (New York: Prentice-Hall, Inc., 1941) 161 pages, $2.50.

A combination text and workbook for use in orientation and appreciation of physical education for college women planned "to introduce the student to the broad area of recreation, which is an essential part of modern living, and to identify and interpret the opportunities in its activities for personal growth and development." The first part, sub-titled, "Better Living Through Physical Education," is designed for orientation into the areas of physical education. The second part, sub-titled, "Appreciation of Physical Education Activities," is designed to help summarize the instructional materials in twenty physical activities. A workbook for women that seems to meet the need for more academic coverage of the college courses in physical education activities.

ARMS FOR LIVING. Gene Tunney. (New York: Wilfred Funk, Inc., 1941) 291 pages, $2.00.

Since the author is a Lieutenant Commander in active charge of the physical training program of the U. S. Navy, this book was expected to give a somewhat detailed account of the program of training for the young men in naval service. Instead Tunney has recounted the experiences of his life. Paragraphs on character training, the will to win, and the importance of conditioning and military bearing are interspersed with various incidents, and make rather interesting reading. Junior High school boys will find the book enlightening and enjoyable reading. Concrete suggestions for adequate conditioning to meet the needs of adult life during wartime are missing. It is rather disappointing since Tunney's reputation would lend much to a definite routine for general use.

The need for professionally trained personnel to administer a sound program of physical training, or physical education, and active recreation for the armed forces is indicated, if this material is a sample of the planned program for the U. S. Navy.

CHESS. Kenneth M. Grover and Thomas Wiswell. (New York: A. S. Barnes and Company, 1941) 93 pages. $1.00.

"Chess knows no political boundaries and speaks no particular language," and has been played for over five thousand years in one form or another. Two of America's top-ranking players have clearly, concisely, and expertly brought chess into every day language.

THE CHILDREN'S PARTY BOOK. Mary Breen. (New York: A. S. Barnes and Company, 1941) 244 pages. $2.50.

A how-to-do and how-to-make book of games, decorations, menus, and favors for parties. It is divided into two sections: "When Three to Ten Plays Host," and "Rollicking Parties for Boys and Girls from Ten to Fourteen." Parties for every conceivable special occasion, and then some, are explained in detail. The book is highly recommended as a necessary part of every teacher's and recreation leader's handy reference shelf.

THE EDUCATION OF FREE MEN IN AMERICAN DEMOCRACY. Education Policies Commission. (Washington, D. C.: National Education Association, 1941) 115 pages. $0.50.

Written and published prior to the declaration of war, this splendid statement of what the education of a free men should consider, is an idealistic and far-reaching policy. "Democracy was conceived, not by cowards and weaklings but by men of destiny, strong and fearless, who preferred to die rather than live in bondage, and by such men it has been nurtured and strengthened through long centuries of struggle." Democracy "is a bold and positive faith which, . . . calls men to battle for the defense and realization of noble and lofty conceptions of the nature and destiny of men," and since the greatest stronghold of this lofty conception has lately been attacked, men are now engaged in defending it from the barbaric banditry of totalitarianism. The philosophy of democracy as evolved will be more than ever applicable when the struggle is over. *"Education of Free Men in American Democracy"* will become the Education of Free Men in World Democracy—more than a phrase, it will become the watchword and guide for all men.

FIELD HOCKEY FOR GIRLS. Josephine Lees. (New York: A. S. Barnes and Company, 1942) 88 pages. $1.00.

One of the popular Dollar Sports Library Series which the beginner, experienced player, and teacher or coach will find useful in presenting the ever-popular girls' game. The charts and splendid pictures are an added contribution to the first field hockey book published in six years.

ICE HOCKEY. Eddie Jeremiah. (New York: A. S. Barnes and Company, 1942) 120 pages. $1.00.

A complete manual of ice hockey stressing the fact that the player must be as good with his head

as with his body, written by the coach of famous teams of Dartmouth College. Well illustrated with charts, diagrams, and photographs, the only shortcoming seems to be that the material is crowded into too few pages. With the ever-increasing number of indoor skating rinks and the growth in popularity of professional hockey, the inclusion of hockey as a part of the school athletic program is definitely indicated. Therefore, this volume will meet a felt need for those having or contemplating hockey programs.

THE MACHINERY OF THE BODY. Anton J. Carlson and Victor Johnson. (Chicago: The University of Chicago Press, 1941) 620 pages. $4.00.

A college physiology text prepared, and later revised, to meet specific needs as shown in actual use. It is written in clear, easily understood language, following the thesis that "The physiologist should be sure that, in general, what he learns about animals from his experimentation will be applicable to man, in whom his main interest centers." The excellent illustrations are of recent date, and expressly designed for this text. Many of the pictures are taken from motion pictures used as supplementary classroom materials with this course. In addition to description of the normal physiological status, the authors state, ". . . we shall consider many instances of the abnormal because they not only are of interest in themselves but also help us understand the normal operation of the living." A splendid text that should find wide usage.

PLAIN WORDS ABOUT VENEREAL DISEASES. Thomas Parran, (M.D.) and R. A. Vonderlehr, (M.D.). (New York: Reynal and Hitchcock, 1941) 226 pages. $2.00.

Venereal diseases presented in clear, convincing language without exaggeration. Laws are useless without the backing of public opinion. The authors present here the facts, supported by conclusive evidence of the scope of the venereal disease problem, and what might be expected if the warnings continue unheeded. Because of the book's *plain words* a considerable storm has broken in official circles, but this is sometimes the only way which results in definite action, and for this reason needs the attention of every health education specialist.

RECOMMENDED PROCEDURE AND EQUIPMENT SPECIFICATIONS FOR EDUCATIONAL 16-MM PROJECTION. Report. (New York: National Research Council, 1941) 54 pages.

A report prepared by the Committee on Scientific Aids to Learning for selection and use of 16-mm picture equipment for educational institutions, optical characteristics of screens that are presently available, and acceptable performance to be expected of 16-mm projection equipment. The recommendations indicate careful thought and study of the problems involved in this phase of visual aids for classroom instruction.

SCHOOL HEALTH SERVICES. W. Frank Walker, (Dr. P.H.), and Carolina R. Randolph. (New York: The Commonwealth Fund, 1941) 198 pages. $1.50.

Sub-titled "A Study of the Programs Developed by the Health Department in Six Tennessee Counties," emphasis was given to dental caries; vision defects; tonsilar defects; heart and lung defects; nutrition defects; and immunization, in successive physical examinations on the same groups of children between 1930 and 1936. The conclusions reached are that when parents are present at examinations, defects are corrected in a larger percentage of cases; that the blue ribbon program is helpful; that preschool supervision and examination lower the number of subsequent defects; that successive yearly examinations reveal about the same number of defects without definite follow-up procedures; and most of all that parental cooperation aids materially in any all-round health service and health instruction program.

SOCCER AND SPEEDBALL FOR GIRLS. Florence L. Hupprich. (New York: A. S. Barnes and Company, 1942) 88 pages. $1.00.

The fundamentals of these games, beginners' faults and ways to correct them, and the necessities of team strategy are discussed and described from the girls' and women's viewpoint. Another of the popular Dollar Sports Library Series that should be in every school and every teachers' library.

SWIMMING. Robert J. H. Kiphuth. (New York: A. S. Barnes and Company, 1942) 110 pages. $1.00.

The East's great swimming coach has finally given us the benefit of his long experience in this volume. Assuming that the reader knows how to swim, Kiphuth has given detailed description of the various racing strokes. The value of conditioning, pre-season training, out-of-water exercises, and some of the testing devices by which his championship teams have been developed are stressed. Excellent illustrations add much to this latest contribution to the literature on swimming. Competitors and coaches will find many of the inside tips valuable.